No. 7084

United States
Circuit Court of Appeals
For the Ninth Circuit

CHAS. H. LILLY CO., a Corporation, WILMOT H. LILLY, KASENO PRODUCTS CO., a Corporation, and GEORGE F. LINQUIST,

Appellants,

vs.

I. F. LAUCKS, INC., a Corporation,

Appellee.

Transcript of Record

Upon Appeal from the District Court of the United States for the Western District of Washington, Northern Division.

PERNAU-WALSH PRINTING CO., 755 MARKET ST., SAN FRANCISCO

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INDEX

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

Index Page

Index

Index Page

NAMES AND ADDRESSES OF SOLICITORS.

JAY C. ALLEN, Esquire,
Rooms 216-20, 719 Second Ave. Building,
Seattle, Washington,
Solicitor for Appellants.

WELDON G. BETTENS, Esquire,
1001 Exchange Building, Seattle, Washington,
Solicitor for Appellants.

G. WRIGHT ARNOLD, Esquire,
1608 Smith Tower, Seattle, Washington,
Solicitor for Appellee.

CLINTON L. MATHIS, Esquire,
1608 Smith Tower, Seattle, Washington,
Solicitor for Appellee.

RAYMOND D. OGDEN, Esquire,
1018 Alaska Building, Seattle, Washington,
Solicitor for Appellee.

WARD WILLIAM RONEY, Esquire,
1018 Alaska Building, Seattle, Washington,
Solicitor for Appellee. [1]*

*Page numbering appearing at the foot of page of original certified Transcript of Record.

In the United States District Court for the Western District of Washington, Northern Division.

In Equity

No. 659

I. F. LAUCKS, INC., a corporation,

Plaintiff,

vs.

KASENO PRODUCTS CO., a corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a corporation, and WILMOT H. LILLY,

Defendants.

BILL OF COMPLAINT FOR INJUNCTION AND ACCOUNTING OF PROFITS AND DAMAGES FOR INFRINGEMENT OF (1) PATENT NO. 1,689,732, (2) PATENT NO. 1,691,661.

To the Judges of the District Court of the United States for the Western District of Washington:

Comes now the plaintiff above named and for cause of action alleges:

I.

That plaintiff, I. F. Laucks, Inc., is now, and during all of the times hereinafter referred to as to it has been, a corporation duly organized and existing under and by virtue of the laws of the State of Washington and has and had its principal place of business in the City of Seattle, State of Washington,

and that it has paid its annual license fee last past due.

II.

That defendant Kaseno Products Co., is now, and during all the times hereinafter alleged as to it has been, a corporation organized and existing under and by virtue of the laws of the State of Washington, having its principal place of business in the City of Seattle, County of King, and State of Washington; that defendant George F. Linquist is a citizen and resident of the City of Seattle, County of King, and State of Washington; that defendant Chas. H. Lilly Co., is now, and during all the times hereinafter alleged as to it has been a corporation organized and exist- [2] ing under and by virtue of the laws of the State of Delaware, having its principal place of business in the City of Seattle, County of King, and State of Washington; and that defendant Wilmot H. Lilly is a citizen and resident of the City of Seattle, County of King and State of Washington.

III.

That this is a suit in equity for infringement of Letters Patents jointly and severally committed by all of said defendants; that all of said parties are directly interested in, and will be affected by, the result of said suit; that said parties have joined and conspired one with the other to infringe upon said patent and/or to contribute to infringe upon

said patent and to destroy the value thereof to the plaintiff and threaten to continue to infringe; further, that said parties are joined to avoid a multiplicity of suits, and the jurisdiction of the Court as to the action for infringement of the patents depends upon the patent laws of the United States.

IV.

That heretofore, to-wit, prior to October 29, 1923, Irving F. Laucks and Glenn Davidson, of Seattle, were the original, first and joint inventors of a new and useful invention, to-wit, Vegetable Glue and Method of Making Same, not known or used by others before their invention or discovery thereof, or patented or described in any printed publication in the United States of America, or in any foreign country, before their invention or discovery thereof, or more than two years prior to their application for Letters Patent therefor in the United States of America, or in public use or on sale in the United States of America for more than two years prior to such application for Letters Patent therefor, and not abandoned; that thereupon, to-wit, on October 29, 1923, the said Irving F. Laucks and Glenn Davidson made application in writing in due form of law to the Commissioner of Patents of the United States of America for Letters Patent for said invention and complied in all respects with the conditions and requirements of said law; that after due proceedings had and [3] due examination made by the Commissioner of Patents upon the aforesaid

application as to the patentability of said invention, on October 30, 1928, Letters Patent of the United States of America, No. 1,689,732, and bearing date the day and year aforesaid, were in due form of law granted and issued and delivered by the Commissioner of Patents of the United States of America to the said Irving F. Laucks and Glenn Davidson, their heirs, legal representatives and assigns; that thereby there was granted and secured to the said Irving F. Laucks and Glenn Davidson, their heirs, legal representatives and assigns, for the full term of seventeen years from and after said October 30, 1928, the exclusive right and liberty of making, using and vending to others to be used the said invention throughout the United States of America and the territories thereof, all as will more fully and at large appear in and by said original Letters Patent or a copy thereof ready in Court to be produced as may be required.

V.

That heretofore, to-wit, on or about October 22, 1923, said Irving F. Laucks and Glenn Davidson, by an instrument in writing by them executed in their names, did sell, assign, transfer and set over unto I. F. Laucks, Inc., the plaintiff herein, a corporation organized and existing under and by virtue of the laws of the State of Washington, the full and exclusive right, title and interest in and to the said invention and in and to the said Letters Patent No. 1,689,732; that said instrument was duly recorded

in the United States Patent Office in Liber I, 120, p. 299 of Transfers of Patents, on October 29, 1923, all as in and by said original instrument in writing or a duly certified copy thereof ready in Court to be produced will more fully and at large appear.

VI.

That heretofore, to-wit, prior to October 29, 1923, Irving F. Laucks and Glenn Davidson, of Seattle, were the original, first and joint inventors of a new and useful invention, to-wit, Vegetable Glue and Method of Making Same, not known or [4] used by others before their invention or discovery thereof, or patented or described in any printed publication in the United States of America, or in any foreign country, before their invention or discovery thereof, or more than two years prior to their application for Letters Patent therefor in the United States of America, or in public use or on sale in the United States of America for more than two years prior to such application for Letters Patent therefor, and not abandoned; that thereupon, to-wit, on October 29, 1923, the said Irving F. Laucks and Glenn Davidson made original application in writing in due form of law to the Commissioner of Patents of the United States of America for Letters Patent for said invention and complied in all respects with the conditions and requirements of said law; that after due proceedings had and due examination made by the Commissioner of Patents upon the aforesaid application as to the patenta-

bility of said invention, said application was divided and application, serial number 174,093 was filed March 9, 1927, and that Letters Patent of the United States of America No. 1,691,661, dated November 13, 1928, were in due form of law granted and issued and delivered by the Commissioner of Patents of the United States of America to the said Irving F. Laucks and Glenn Davidson, their heirs, legal representatives and assigns; that thereby there was granted and secured to the said Irving F. Laucks and Glenn Davidson, their heirs, legal representatives and assigns, for the full term of seventeen years from and after said November 13, 1928, the exclusive right and liberty of making, using and vending to others to be used the said invention throughout the United States of America and the territories thereof, all as will more fully and at large appear in and by said original Letters Patent or a copy thereof ready in Court to be produced as may be required.

VII.

That heretofore, to-wit, on or about March 1, 1927, said Irving F. Laucks and Glenn Davidson, by an instrument in writing by them executed in their names, did sell, assign, [5] transfer and set over unto I. F. Laucks, Inc., the plaintiff herein, a corporation organized and existing under and by virtue of the laws of the State of Washington, the full and exclusive right, title and interest in and to the said invention and in and to the said Letters Patent

No. 1,691,661; that said instrument was duly recorded in the United States Patent Office in Liber U, 129, p. 458 of Transfers of Patents on March 9, 1927, all as in and by said original instrument in writing or a duly certified copy thereof ready in Court to be produced will more fully and at large appear.

VIII.

That said inventions and each of them so patented in and by said Letters Patents were and are of great value and commercial utility and went into great and extended use, and the trade and public in and throughout the United States of America have generally recognized and acquiesced in the novelty, utility, value and patentability of said inventions and each of them and have acquiesced in the validity of said Letters Patent and of the exclusive rights of plaintiff thereunder, and said plaintiff has invested and expended large sums of money and has been to great trouble in and about said inventions and each of them for the purpose of carrying on the business of manufacturing adhesive embodying said patented inventions; and that said inventions and each of them have been and are of great benefit and advantage.

IX.

That plaintiff has manufactured, sold and caused to be used great quantities of adhesive embodying and containing said patented inventions, and each of them, and the same have been purchased and

used by the public and generally and extensively recognized by the public as of great utility and novelty, and plaintiff has built up a profitable and valuable business in the manufacture and sale thereof; that plaintiff's said inventions along with other inventions, relative which a suit is pending between the plaintiff and the defendants herein, have resulted in great economies to the users of adhesive, particularly the veneer industry, said adhesives practically supplanting former adhesives of animal origin wherever a highly water resistant product is desired; that upon or to each of the containers or sacks in which [6] the said manufactured material was vended by the plaintiff since the date of the grant and delivery of said Letters Patents and the assignments thereof, there has been marked in plain and conspicuous letters, as respects Patent No. 1,689,732, "Patent No. 1,689,732"; and as respects Patent No. 1,691,661, "Patent No. 1,691,661"; that but for the wrongful and infringing acts of defendants as herein set forth, plaintiff would now enjoy the exclusive rights and privileges to it granted by said Letters Patents and the same would be of great profit and advantage; that defendants and each of them have been notified as respects Patent No. 1,689,732, in writing on or about November 16, 1928, or had knowledge of the grant, issuance and delivery of said Letters Patent and warned not to infringe thereon or to manufacture, sell or use adhesive embodying or containing said patented invention, and said plaintiff had

caused to be published in The Timberman, an international lumber journal published in Portland, Oregon, under date of issue November, 1928, a notice to the effect that it, the plaintiff, owned patents giving it the exclusive right to the manufacture of an adhesive embodying its patented invention; that defendants and each of them have been notified as respects Patent No. 1,691,661, in writing on or about November 16, 1928, or had knowledge of the grant, issuance and delivery of said Letters Patent and warned not to infringe thereon or to manufacture, sell or use adhesive embodying or containing said patented invention, and said plaintiff had caused to be published in The Timberman, an international lumber journal published in Portland, Oregon, under date of issue November, 1928, a notice to the effect that it, the plaintiff, owned patents giving it the exclusive right to the manufacture of an adhesive embodying its patented invention; that notwithstanding said notice and said knowledge, said defendants have jointly and/or severally infringed upon said patents; that said defendants have jointly and/or severally caused to be manufactured and/or sold and/or used adhesive embodying its said patented inventions; that said defendants have jointly and/or severally contributed to said infringement by making and/or selling and/or using and/or causing to be made and/or causing to be sold and/or causing to be used said infringing [7] adhesive; that said defendants Kaseno Products Co.,

and Chas. H. Lilly Co. have jointly and/or severally contributed to said infringement by making and/or selling and/or using and/or causing to be made and/or causing to be sold and/or causing to be used said infringing adhesive; that said defendant Kaseno Products Co. has made and/or sold and/or used or has caused to be made and/or sold and/or used adhesive embodying said patented invention, and said defendant Chas. H. Lilly Co. has contributed to said infringement by selling and/or causing to be sold to said Kaseno Products Co., soya bean and/or vegetable protein material adapted and intended to be employed as a substantial part of the combination invented and patented, i. e., as a substantial part in the manufacture of said infringing adhesive of said Kaseno Products Co., said Chas. H. Lilly Co. well knowing that said material was to be thus used to manufacture said infringing adhesive and fully intending that it should be so used; that on information and belief, said defendant George F. Linquist is the president of said defendant Kaseno Products Co., that he directs and controls all its acts, and is directly and personally in charge of conducting the infringing acts herein complained of as respects the Kaseno Products Co.; that, on information and belief, said defendant Wilmot H. Lilly is the president of said defendant Chas. H. Lilly Co., that he directs and controls all its acts, and is directly and personally in charge of conducting the infringing acts herein

complained of as respects Chas. H. Lilly Co.; that said defendants have conspired together to infringe upon said patent rights and each and all of them refuse to desist therefrom and threaten to continue said infringement and invasion of plaintiff's rights and intend, unless prohibited by this Court to continue to infringe said Letters Patents by manufacturing and/or selling and/or using, and/or causing to be manufactured and/or sold and/or used, adhesive embodying said inventions; that the use of said inventions by said defendants and their acts severally and jointly and their preparation for and avowed determination to continue the said infringing acts, and their other aforesaid unlawful acts in disregard and defiance of the rights of the plaintiff, have the effect to, and do encourage and induce others to venture to infringe said [8] Letters Patents in disregard of the plaintiff's rights; all of said alleged infringing conduct having been committed within the six years next preceding the filing of this bill of complaint and within the western district of Washington and elsewhere in the United States. All the aforesaid acts complained of in this paragraph are in infringement of each and all of the claims in said Letters Patents on each of which, said plaintiff relies.

X.

That said acts of infringement of plaintiff's said patent rights have greatly damaged said plaintiff,

to-wit, in the amount of one hundred thousand dollars ($100,000.00) and said infringing acts are done wilfully, intentionally and in direct defiance of plaintiff's said patent rights secured to said plaintiff by said United States Letters Patents, and with the threat and full intention of continuing of said infringing acts.

Wherefore, plaintiff prays:

1. That a writ of injunction issue out of this Court enjoining and restraining defendants and each of them, their officers, clerks, attorneys, servants, agents and workmen, not only perpetually, but provisionally during the pendency of this suit, from making or causing to be made, selling or causing to be sold, using or causing to be used, contributing to the making or causing to be made, contributing to the selling or causing to be sold, contributing to the using or causing to be used, adhesive embodying or containing the inventions patented in and by said Letters Patents, or any of said patents separately or in combination.

2. That defendants, and each of them, be decreed to account for and pay over unto plaintiff all profits, gains and advantages realized or received by them, or either of them, from said infringing acts, and that plaintiff have judgment against defendants for the damages suffered by plaintiff in the premises and that said damages be trebled.

3. That plaintiff have such other further or different relief as in equity and good conscience the

Court shall deem meet, together with judgment against defendants for plaintiff's costs and [9] disbursements in this behalf sustained.

I. F. LAUCKS, INC.,
By G. WRIGHT ARNOLD,
By RAYMOND D. OGDEN,
Its Attorneys.

State of Washington,
County of King.—ss.

Personally appeared before the undersigned authority I. F. Laucks, who being duly sworn as to the truth of the allegations made in the above bill, says that he is president of the plaintiff in the above cause, has ready the foregoing bill and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes them to be true.

I. F. LAUCKS.

Subscribed and sworn to before me this 14th day of February, 1929.

[Seal] G. WRIGHT ARNOLD,
Notary Public in and for the State of Washington, residing at Seattle.

[Endorsed]: Filed Feb. 14, 1929. Ed. M. Lakin, Clerk. [10]

[Title of Court and Cause.]

SUBPOENA.

The President of the United States of America,

To Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly,

GREETING:

YOU ARE HEREBY COMMANDED, That you be and appear in said District Court of the United States aforesaid, at the Court Room of said Court, in the City of Seattle, on the 6th day of March, 1929, to answer a bill of complaint filed against you in said Court by I. F. Laucks, Inc., a corporation, and to do and receive what the Court shall have considered in that behalf. And this you are not to omit under the penalty of the law.

WITNESS the Honorable Edward E. Cushman, Judge of said Court, and the seal thereof, at Seattle, Washington, this 14th day of February, 1929.

[Seal] ED. M. LAKIN,
Clerk.
By T. W. EGGER,
Deputy Clerk.

MEMORANDUM PURSUANT TO RULE 12, SUPREME COURT, U. S.

YOU ARE HEREBY REQUIRED to file your answer or other defense in the above mentioned

suit on or before twenty days from the date of service, excluding the day thereof, at the Clerk's office of said Court, pursuant to said bill; otherwise the said bill will be taken pro confesso.

ED. M. LAKIN,
Clerk.

By T. W. EGGER,
Deputy Clerk.

G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
For Plaintiff. [11]

MARSHAL'S RETURN.

United States of America,
Western District of Washington.—ss.

I HEREBY CERTIFY, That I have served the within writ by delivering to and leaving a true copy thereof with, Wilmot H. Lilly, personally, and Chas. H. Lilly Co., by serving Wilmot H. Lilly as Secretary, and on Geo. F. Linquist, personally, and Kaseno Products Co., by serving Geo. F. Linquist as Secretary and Manager.

E. B. BENN,
United States Marshal,
By J. M. GREEN,
Deputy.

Feb. 25th, 1929.
Fees $8.40

[Endorsed]: Filed Feb. 26, 1929. Ed. M. Lakin, Clerk. [12]

[Title of Court and Cause.]

MOTION FOR LEAVE TO AMEND ANSWER.

Come now the defendants Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, in the above entitled cause, and move the court for leave to amend their answer as will appear in the amended answer herewith filed and attached hereto. That said amendments are material and necessary to a proper defense of the case, that the matter as amended and the amendments affixed were not known prior to the filing of the original answer.

That Dr. Sadakichi Satow is a resident of Japan and only recently has been in consultation with attorneys for defendants in Seattle. That patents have been issued to him and articles have been written by him and published and some of them are set up and cited in the original answer on file herein. That within the last ten days Dr. Satow has been in telegraphic communication with Japan and in consultation with counsel and solicitors for the defendants and has disclosed to them the additional publications of articles and patents written by or issued to him and cited in the proposed amended answer as well as some of the other publications by authors and patents referred to in the proposed amended answer in addition to those cited in the original answer. That prior to last Tuesday evening, February 25, 1930, defendants and attorneys did not have sufficient knowledge

of such matters so alleged in the proposed amended answer to allege the same. That defendants have engaged other expert chemists since the filing of the answer herein and they have very recently called attention of counsel to some of the citations of patents and publications set forth or cited and referred to in the proposed amended answer in addition to those set up in the original answer herein.

That the practice in actions at law (See R. S. 4920) in patent cases permits proof by defendants of publications and patents, [13] among other things, if notice thereof is given 30 days before the trial. That notice of the additional references set up in the proposed amended answer to articles, publications and patents have been served on plaintiff by service on their solicitors and attorneys more than 30 days prior to the date of trial hereof in consequence of which, and the service of a copy of the proposed amended answer on plaintiff's attorneys on the 28th day of February, 1930, plaintiff has received notice which would be sufficient in a law action to permit defendants to prove the references cited therein.

Wherefore defendants pray that such amendments be allowed and for an order permitting the filing of the amended answer submitted herewith.

J. Y. C. KELLOGG and
RICHARD J. COOK,
Solicitors for Defendants.

[Endorsed]: Filed Feb. 28, 1930. Ed. M. Lakin, Clerk. [14]

[Title of Court and Cause.]

ORDER ALLOWING AMENDED ANSWER TO BE FILED.

This cause coming on to be heard on the 3rd day of March, 1930, on motion of the defendants, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, to amend their answer, and both parties having appeared, and the court being fully advised of the amendment sought to be made to the answer by the defendants heretofore filed herein, it is hereby

ORDERED, ADJUDGED and DECREED that the motion be granted and that said defendants, The Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly be and they are hereby granted leave to file an amended answer herein.

Dated this 20th day of March, 1930.

EDWARD E. CUSHMAN,
Judge of the above entitled Court.

O. K. as to form:
G. WRIGHT ARNOLD,
RAYMOND OGDEN,
By MATHIS.

[Endorsed]: Filed Mar. 20, 1930. Ed. M. Lakin, Clerk. [15]

[Title of Court and Cause.]

ORDER ALLOWING AMENDED ANSWER TO BE FILED.

This cause coming on to be heard March 3rd, 1930, on the motion of defendants Kaseno Products Co., a corporation, and George F. Linquist, to amend their answer, and the court being fully advised of the amendments sought to be made to the answer by the defendants heretofore filed herein,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that the motion be granted, and that the amended answer of defendants here be filed.

Dated, March 3rd, 1930.

EDWARD E. CUSHMAN,
Judge of the Above Entitled Court.

[Endorsed]: Filed Mar. 3, 1930. Ed. M. Lakin, Clerk. [16]

[Title of Court and Cause.]

AMENDED ANSWER.

The defendants, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, now and at all times saving and reserving unto themselves all benefit and advantage of exception which can or may be had or taken to the errors or uncertainties or other imperfections in said bill of complaint contained, for answer thereto, or unto so much of said parts

thereof as said defendants are advised is or are material for them to answer unto, say as follows:

I.

Defendants admit the allegations contained in paragraphs I and II of the bill of complaint.

II.

With respect to paragraph III, defendants admit the jurisdiction of the Court, but deny each of the other allegations contained therein.

III.

With respect to paragraph IV of the bill of complaint, defendants deny that on or before October 29, 1923, or at any time, Irving F. Laucks and Glenn Davidson, of Seattle, were the original or first or joint inventors of any new or useful invention, to-wit: Vegetable Glue and Method of Making Same, purported to be set forth, or claimed, in letters patent of the [17] United States No. 1,689,732, but admit, upon information and belief, that a certain instrument purporting to be letters patent of the United States was issued by the United States Patent Office on October 30, 1928, under Number 1,689,732, upon an application filed by Irving F. Laucks and Glenn Davidson on October 29, 1923; but defendants are without knowledge as to what further proceedings were had and taken in the matter of said application and therefore deny plaintiff's allegations in reference thereto.

Defendants further deny that the said alleged letters patent were duly or regularly applied for, prosecuted, granted, issued or delivered to said Irving F. Laucks and Glenn Davidson and further deny that thereby there was granted or secured to them, their heirs, legal representatives or assigns any sole or exclusive right to make, use or vend the said alleged invention.

Defendants further deny that the alleged invention, purported to be set forth by said letters patent, was not known or used by others before the alleged invention or discovery thereof by the said Irving F. Laucks and Glenn Davidson; nor patented nor described in any printed publication in this or any foreign country before their alleged invention or discovery thereof or for more than two years prior to the application for said letters patent, nor in public use or on sale in this country for more than two years prior to the said application and not abandoned, and deny each and every other allegation set forth and contained in said paragraph.

IV.

With respect to paragraph V of the bill of complaint, defendants are without knowledge whether on October 22, 1923, said Irving F. Laucks and Glenn Davidson, by a certain instrument in writing by them, did sell, assign, transfer and set over unto [18] I. F. Laucks, Inc., the plaintiff herein, the full and exclusive right, title and interest in and to said letters patent No. 1,689,732, and therefore deny the

alleged instrument was duly recorded in the United States Patent Office.

V.

With respect to paragraph VI of the bill of complaint, defendants deny that on or before October 29, 1923, or at any time, Irving F. Laucks and Glenn Davidson, of Seattle, were the original, or first or joint inventors of any new or useful invention, to-wit: Vegetable Glue and Method of Making Same, purported to be set forth, or claimed, in letters patent of the United States Number 1,691,661, but admit that a certain instrument purporting to be letters patent of the United States was issued by the United States Patent Office on November 13, 1928, under Number 1,691,661, upon any application filed by Irving F. Laucks and Glenn Davidson on October 29, 1923; but defendants are without knowledge or information as to what further proceedings were had or taken in the matter of said application and therefore deny plaintiff's allegations in reference thereto.

Defendants further deny that the said alleged letters patent were duly or regularly applied for, prosecuted, granted, issued or delivered to said Irving F. Laucks and Glenn Davidson, and further deny that thereby there was granted or secured to them, their heirs, legal representatives or assigns any sole or exclusive right to make, use or vend the said alleged invention.

Defendants further deny that the alleged invention, purported to be set forth by said letters patent, was not known or used by others before the alleged invention or discovery thereof by the said Irving F. Laucks and Glenn Davidson; nor patented nor described in any printed publication in this or any [19] foreign country before their alleged discovery or invention thereof or for more than two years prior to the application for said purported letters patent, nor in public use or on sale in this country for more than two years prior to the said purported application and not abandoned, and deny each and every other allegation set forth and contained in said paragraph.

VI.

With respect to paragraph VII of the bill of complaint, defendants are without knowledge whether on March 1, 1927, said Irving F. Laucks and Glenn Davidson, by a certain instrument in writing by them, did sell, assign, transfer and set over unto I. F. Laucks, Inc., the plaintiff herein, the full and exclusive right, title and interest in and to said letters patent No. 1,691,661, and therefore deny the alleged instrument was duly recorded in the United States Patent Office.

VII.

With respect to paragraph VIII of the bill of complaint, defendants specifically deny each and every allegation contained therein.

VIII.

With respect to paragraph IX of the bill of complaint, defendants deny that they have committed or are now committing or threaten to continue committing any wrongful or infringing acts, as further alleged in said paragraph; and deny that they have been notified in writing or have had any knowledge of the grant, issue and delivery of said purported letters patents enumerated in said paragraph IX, and have been warned not to infringe thereon or to manufacture, sell or use adhesives embodying or containing said patented inventions.

With respect to the publication of the Timberman, [20] appearing in said paragraph IX, defendants are without knowledge.

Further answering said paragraph IX, defendants specifically deny each and every other allegation contained therein.

IX.

With respect to paragraph X of the bill of complaint, defendants deny each and every allegation contained therein, and deny that plaintiff has been damaged to the sum of $100,000.00 or in any sum or amount whatsoever.

Defendants, further answering said bill of complaint, by way of affirmative defense thereto, allege as follows:

(a) That the alleged new and useful inventions for adhesives, purported to be set forth in each of

said alleged letters patents, were not patentable inventions or discoveries under the Patent Laws of the United States, in view of the known state of the art, and defendants, upon information and belief, aver that the alleged inventions or discoveries purported to be set forth in each of said alleged letters patents were well known and used prior to the alleged discovery or invention thereof by Irving F. Laucks and Glenn Davidson;

That adhesive composition embodying and showing substantially the alleged inventions of Irving F. Laucks and Glenn Davidson are further shown by various publications and letters patents issued prior to the alleged discoveries or inventions of Irving F. Laucks and Glenn Davidson, and more than two years prior to the filing of their applications for patents;

That the creation of said alleged inventions came about solely through the exercise of ordinary skill; that any [21] subsequent elaborations by way of execution of further plans and preparations or specifications of letters patents involved no more than the exercise of ordinary skill, and that said purported letters patents, as a consequence, are invalid and void.

(b) That all material or substantial parts of said alleged inventions, as described in the specification and defined by the claims, are described in divers publications and letters patents in the United States and foreign countries prior to the date of the pur-

ported inventions thereof by the said Irving F. Laucks and Glenn Davidson, and more than two years prior to the filing of their applications for patents, including the following:

LETTERS PATENTS:

Number	Name	Date
1,245,975	Satow	Nov. 6, 1917
140,911 (British)	O'Gorman	Apr. 8, 1920
838,785	Isaacs	Dec. 18, 1906

PUBLICATIONS:

Scientific essays of Dr. Sadakichi Satow (then Professor of the Imperial University of Japan, also patentee of many patents listed hereunder the name of Satow) published monthly from October, 1919, to and including September, 1920, in Kogyu Kagaku Zashi (Journal of Industrial Chemistry) published by Kogyu Kagaku Kai (the Society of Industrial Chemistry), a monthly periodical published at Tokyo, Japan, and delivered to all parts of the world; and more particularly the following portions of the essays:

November 1919	pps. 58, 69
January 1920	pps. 2, 6, 12, 13
May 1920	pps. 429-438 [22]

each of the monthly essays applying to soya beans and the industrial and commercial uses thereof; portions of which essays have been translated and printed in English in two separate publications, as follows:

"Research on Oil and Proteids Extraction from Soy-Bean" by Sadakichi Satow, from the Technology Reports of the Tohoku Imperial University, Vol. II, No. 2 (Reprinted October, 1921); "Manufacture of Plastic Products from Proteid of Soy-Bean" by Sadakichi Satow, from the Technology Reports of the Tohoku Imperial University, Vol. III, No. 4. (Reprinted June, 1923);

(c) Defendants aver that said letters patents of Irving F. Laucks and Glenn Davidson are wholly invalid and void because, for the purpose of deceiving the public, the specifications and claims filed by applicants, Irving F. Laucks and Glenn Davidson in the Patent Office were made to contain less than the whole truth relative to their inventions or discoveries; that the protein of the soya bean, and other seeds, is practically identical with the protein of milk, and the art of making high-water-resistant adhesive compositions from casein is old; not only is the art of making high water-resistant adhesive compositions from casein old, but the art of making such high water-resistant adhesives, consisting of caustic soda, lime, and equivalents, copper sulfate, cuprammonium compounds, copper-caustic soda compounds, and equivalents, tanning agents, sodium silicate, and equivalents, resin, and equivalents, sulphur containing compounds, such as carbon bisulphide and equivalents, sodium phosphate, sodium perborate and sodium sulphite, and equivalents, and the combination of such salts as above enumerated with a weak acid, is old; therefore the

substitution of proteins of the soya bean and other seeds for casein in which [23] these common and well known water-proofing agents are employed is merely adapting an old art to an equivalent material; that casein reacts similar to soya bean protein in substantially all respects and is, therefore, a direct substitute and an equivalent.

Defendants aver that said letters patents of Irving F. Laucks and Glenn Davidson are wholly invalid and void because, the description of the invention in the specifications are not in such full, clear, concise, and exact terms as to enable any person skilled in the art of science to which it appertains or with which it is most nearly connected, to make, construct, compound, and use the same.

(e) OTHER PUBLICATIONS:

A paper read by Dr. Oskar Nagel at the Chemists' Club in New York City on Nov. 20, 1903, entitled "On Vegetable Protein," wherein a portion of said paper was devoted to a discussion of Vegetable Casein; said paper, as read by Dr. Nagel being subsequently printed in the Journal of the Society of Chemical Industry on December 31, 1903, in Volume 22, pages 1337 and 1338, said journal referred to being published in England and having general circulation at that time in both England and the United States; that said paper dealing with vegetable casein was, later on, published in book on "Casein, Its Origin, Prepara-

tion and Properties" which book was composed by one, Robert Shearer. The book referred to was first published in 1905 in a German edition, 1906 English edition, 1911 2nd English, revised and enlarged edition and 1921 3rd revised and enlarged edition. The article is herein set forth as follows, to-wit:

"For making vegetable casein, which, in its solubility, [24] viscosity, and other properties, is equal to milk casein, I use soy-bean, which, until now, has not been used in chemical industries. This seed, being the richest casein-containing seed produced by nature, and at the same time exceedingly cheap, can be imported from China in any quantity desired. It contains 12 to 18 per cent of an excellent edible oil, largely used in the Orient, and 30 to 40 per cent casein. The richness in fat decreases the expense of the process considerably. For making casein the finely ground beans are extracted nearly completely by means of benzine or any other solvent in an apparatus ordinarily used for that purpose. Hydraulic pressure may also be employed for removing the oil, but in this case the residuum will naturally be richer in fat than if worked by extraction. The residue, freed from benzine, is digested at a temperature of 30° to 35°, with a 5 per cent solution of sodium carbonate for several hours, solution being assisted by means of stirring. The solution is then filter pressed.

The casein is now precipitated from the filtered alkaline casein solution, with continuous stirring,

by means of rennet or a 5 per cent solution of hydrochloric acid. The precipitated casein is filtered, washed, and dried in a steam-heated room at as low a temperature as possible. The benzine is removed in the extraction apparatus mentioned above, from the solution of oil in benzine obtained in the first part of the process, and used over again."

A publication in the supplement to the Scientific American Supplement No. 1859, page 115, issued August 19, 1911; said article being entitled "Extended Utilization of Soya Bean Products." The article is set forth herein as follows, to-wit: [25]

"The Soya bean, of whose growth and properties the Scientific American recently gave some account, is attracting increasing attention abroad because of the economic and commercial value of the products obtainable from it. Some of these preparations are important because of their alimentary value, and others from their industrial application.

Many Europeans have been studying the best methods of extracting the nutritive principal contained in these seeds and preserving it in concentrated form, with a view to its availability as part of the rations of armies and particularly of colonial troops.

A Japanese chemist, Karajama, has succeeded in preparing a concentrated "milk," a flour on the order of the Nestle preparations, and biscuits which give a maximum of alimentation with a minimum of volume.

A Chinese factory has been established not far from Paris for the purpose of manufacturing alimentary products from Soya, and it has already put upon the market Soya flour, Soya bread, Soya sauce, Soya milk, Soya cheese, preserves, fermented milk, etc.

The Indo-Chinese prepares from this plant a condensed milk, a flour, a form of Casein which constitutes essential elements of the food supply of the populace.

Recently, moreover, successful experiments have been made, with this vegetable casein as a substitute for animal casein in the various industrial applications, in which the latter have been increasingly utilized.

The well-known chemist inventor, F. J. G. Beltzer, who has made a careful study of the whole subject, publishes in the Revue Scientifique a report of whose most important [26] features we present an abstract, while omitting purely technical details of analysis and manufacture.

In the preparation of industrial casein, the imported casein made in Indo-China by the natives can be used by subjecting it to a process to remove the fatty matter contained, but it is found commercially advisable, because cheaper, to treat the raw product directly.

A quantitative analysis of 190 grams of the raw grain gave the following result:

Dry Casein	25.55	Grains
Oils and fatty bodies	16.42	"
Dry residuary cake	29.80	"
Husks	7.85	"
Dust and impurities	7.90	"
Moisture	12.35	"
Total	99.87	

In Cochin-China and Annam the chief food products made from Soya are vegetable milk and vegetable cheese.

The milk is obtained by crushing the previously well-soaked seeds and then macerating in about ten times their weight of water, thus obtaining a thick milky liquid. Cold water must be used, as otherwise the vegetable albumin will be congealed and cannot be extracted.

This milk should be filtered and drunk fresh or used for making different sorts of cheese, as in the case of cows' milk or goats' milk, while the compressed cake left after filtering, forms a nourishing fodder for animals.

To make the cheese, the vegetable milk is treated with a mineral salt, or an acid, which acts the part of rennet, coagulating the milk into a curd, which is drained, and washed like the curd from ordinary milk.

In Indio-China the milk is coagulated by boiling and [27] by the addition of a powder called Tehach-Kao, which consists of a calcined selenite.

A very small quantity of this causes the complete coagulation of large quantities of milk.

The cheese is usually consumed fresh the same day it is prepared, but can also be preserved by smoking and by salting.

In Annam there are three principal varities of this cheese:

1. The fermented variety, of a gray or yellow color, and a taste suggesting Roquefort.

2. The white or salted variety, resembling goats' milk cheese.

3. The cooked or smoked variety, which looks like Gruyere.

In the market of Saigon the Chinese sell these white or cooked cheeses to the natives at the modest price of 10 centimes per livre. This is about one-tenth the price of Gruyere, which indicates the economic value of this highly nutritious food and suggests the possibility of its future commercial importance.

For purely industrial applications it is necessary, as we have said, that the vegetable casein be entirely free from fatty matters.

In the industrial treatment of Soya, therefore, the process is somewhat different. The three objects sought are: the pure oil, the casein entirely free from oil, and the residuary cake.

The oil is extracted by pressing, and two grades are obtained. The first or purest is sold for edible

purposes, while the second is useful for soap making and other manufactures [28] where oils and fats are employed. The first-pressure oil is worth about 1.9 francs per Kilo, while the second-pressure product brings only about 0.7 francs per Kilo.

The pure casein is prepared from the pulp which remains after the extraction of the oil. The milky liquid obtained by triturating the pulp with cold water, is filtered and treated with powdered gypsum. About one kilo of gypsum per 1,000 liters of the liquid is used. The mixture is brought to a boil and the resulting coagulate is drained and washed in cloth filters. The casein thus obtained is dissolved in a quantity of very dilute soda solution, so weak that the reaction is either neutral or very slightly alkaline. The solution is filtered and then precipitated by acetic acid. The finely divided precipitate obtained is filtered out, washed on the filter and finally dried at low temperature.

The casein thus obtained is white, and from an industrial point of view, very pure. It is insoluble in water, but soluble in dilute caustic alkalines and in ammonia. It exhibits almost precisely the same properties as the casein obtained from ordinary milk. It is found on experiment to be susceptible of the same industrial applications as animal casein, and may come to largely supersede this because of lower cost.

Among the various uses to which it may be applied we may mention its employment in painting,

and for the preparation of products having a resistance to moisture.

It may be used also for the sizing of paper, which consumes such large quantities of ordinary casein. Being soluble in ammonia and caustic solutions it is capable of forming a smooth and solid size.

Other uses are in certain manufacturing processes in the [29] preparation of silks and artificial textiles, as well as of rubber, leathers, plastic materials, films, photographic emulsions, etc. Large amounts of animal casein are at present employed in the manufacture of "galalith" from which are made numerous objects which imitate articles made from ivory, tortoise-shell, bone, horn, etc. The soya casein, when free from fats, is equally well adapted for these purposes.

Formol acts upon this casein in the same way as an ordinary casein, rendering it insoluble. Hence it may be used for the water-proofing of fabrics, straw hats, etc., as well as for the preparation of sizes and dressings.

Chevalott gives a formula for the foregoing purpose.

To 40 parts of casein in 200 parts of water is added dilute milk of lime (1 part Ca O), 20 parts of soap, and 240 parts of water. The fabric is impregnated with this solution and then dried, afterwards being passed through a bath of aluminium acetate. It is also washed with water at 90 deg. C. and dried.

Straw, which is impregnated with an ammoniacal solution of vegetable casein, then dried and finally subjected to formaldehyde vapors at a temperature of 80 deg. to 90 deg. C., becomes impermeable to water.

A solution of vegetable casein and borax can be successfully utilized in the process of calico printing.

It will be seen from the foregoing resume that the fabrications of vegetable casein for industrial purposes has immense possibilities, only exceeded in importance by the alimentary values of its food products for man and beasts.

The residuary cake left after the extraction of both oil and casein still retains sufficient nutritive qualities to [30] be useful as an addition to the feed of animals."

Cements, Glues, Pastes, Mucilages and Adhesives, Chapter 6, pages 271 to 336, appearing in Scientific American, Cyclopedia of Formulae, by Hopkins, published in English by Munn & Co., Inc., of New York in 1911.

Soya-Bean Curd, an Imported Oriental Food product, taken from the Philippine Journal of Science, 1912, A., Volume 7.

A textbook of Paper making by C. F. Cross and E. J. Bevan, 3rd Ed., published by E. & F. N. Spon, Ltd., London, and Spon & Chamberlain, New York, 1907, p. 23.

Wood Pulp by C. F. Cross and others, published by D. Van Nostrand Company, New York, 1911, pp. 38-40, 45, 50-51, 242-249.

Cellulose by C. F. Cross & E. J. Bevan, published by Longmans, Green & Company, London, 1916, pp. 25-27, 247-248, 318.

Chemistry and Technology of Gelatin and Glue, by R. H. Bogue, published by McGraw Hill Company, New York, 1922, pp. 319-344.

Cellulose, Cellulose Products and Artificial Rubber, by Bersch (authorized translation from German 1904) pp. 14-15, 16, 119-161.

Nitrocellulose Industry, E. C. Worden, published by D. Van Nostrand Company, New York, 1911, Vol. 2, pp. 1055-113.

Bulletin No. 439, U. S. Department of Agriculture, Dec. 22, 1916.

(f) Also in many other letters patents and publications not definitely known to the defendants, definite allegations concerning which, when discovered hereafter, defendants pray leave of Court to incorporate herein by suitable amendments hereto. [31]

(g) That during the pendency in the U. S. Patent Office of the aforesaid applications of Irving F. Laucks and Glenn Davidson, that subsequently matured into patents, said applicants so limited the claims of their patents in order to obtain favorable consideration of the same, that they

cannot now ask for or obtain an interpretation of these claims which will bring the defendants' adhesive composition complained of within the scope thereof; that, in view of prior patents hereinbefore and hereinafter specifically referred to, the claims in suit must be so restricted as to exclude defendants' adhesive composition from the purview thereof; such prior patents defendants aver are the full equivalent of plaintiff's patents, said patents being as follows:

Number		Name	Date
1,020,656		Perkins	Mar. 19, 1912
1,357,310		Bloede	Nov. 2, 1920
838,785		Isaacs	Dec. 18, 1906
1,078,692		Perkins	Nov. 18, 1913
1,273,571		Bloede	Jul. 23, 1918
140,911	(British)	O'Gorman	Apr. 8, 1920
1,321,480		Satow	Nov. 11, 1919
1,427,645		Satow	Aug. 29, 1922
1,321,479		Satow	Nov. 11, 1919
1,456,842		Butterman	May 29, 1923
689,023		Reigel	Dec. 17, 1901
1,412,020		Stern	Apr. 4, 1922
1,267,699		Robinson	May 28, 1918
1,373,412		Craver	Apr. 5, 1921
1,244,465		Brabrook	Oct. 30, 1917
845,791		Isaacs	Mar. 5, 1907
621,579		Marsden	Mar. 21, 1899
223,459		Vining	Jan. 13, 1880
86,398		Hirsh	Feb. 2, 1869
650,003		Bremer	May 22, 1900
725,816		Bartels	Apr. 21, 1903
883,995		Weichmann	Apr. 7, 1908
932,527		Weichmann	Aug. 31, 1909
1,016,115		Walland	Jan. 30, 1912
1,437,427		Biddle	Dec. 5, 1922
1,466,241		Naemura	Aug. 28, 1923
22,788	(British)	Ellis	1898
19,853	(British)	Kelly	1910
3,336	(British)	Stern et al.	1915
26,156	(British)	Chavaissieu	1908
8,203	(British)	Triester et al.	1910
			[32]
12,890	(British)	Eberhard	1908
148,216	(British)	Knorr	Jul. 28, 1921
186,157	(British)	Schryver	Mar. 20, 1922

Number		Name	Date
375,767	(French)	Plinatus	Jul. 23, 1907
461,287	(French)	Mercier	Dec. 24, 1913
377,838	(German)	Heinrich	June 28, 1923
16,477	REISSUE	Biddle	Nov. 16, 1926
845,790		Isaacs	Mar. 5, 1907
90,301	(German)	Knorr	Aug. 13, 1917
1,064,841		Yu Ying Li	June 17, 1913
30,275	(British)	Yu Ying Li	Feb. 29, 1912
1,245,980		Satow)	
1,245,891		Satow)	Nov. 6, 1917
1,245,982		Satow)	
984,530		Chavassieu	Feb. 21, 1911
1,280,861		Satow)	
1,280,862		Satow)	Oct. 8, 1918
830,493		Collardon	Sept. 11, 1906
950,435		Chavassieu	Feb. 22, 1910
26,928	(British)	Lilienfeld	1910
241,897		E. R. Von Portheim	May 24, 1881
414,775		A. Depont & S. DePont	1891
632,195		W. W. McLaurin	Aug 29, 1899
601,995		Felix Bauer	Apr. 5, 1898
1,143,893		Dodd & Humphries	June 22, 1915
28,307	(Japanese)	Satow)	
33,092	(Japanese)	Satow)	Aug. 14, 1918
33,018	(Japanese)	Satow)	1918
31,331	(Japanese)	Ishii	July 14, 1917
192,344	(German)	Sadikoff	Jan. 4, 1906
349,885	(French)	Societe Dite Le Fibrocol	1905

Further answering said bill of complaint, defendants allege and charge the fact to be: That the material sold by The Chas. H. Lilly Co. to the Kaseno Products Co. was soya bean meal in the regular and standard form in which said material is sold to the trade in large quantities for divers uses by the said Chas. H. Lilly Co. and by a large

number of manufacturers; that the Chas. H. Lilly Co. and a large number of other manufacturers engaged in like business have sold said material in like form for a long period of time and prior to the issuance of the letters patent in said bill of complaint, and that said soya bean material has been so sold by the Chas. H. Lilly Co. and by a large number of other manufacturers and has been used by the [33] trade for a long period of time and prior to the issuance of said letters patents set forth in said bill of complaint for a large number of uses other than the manufacture of adhesives; and that said soya bean material in the form and manner sold by the Chas. H. Lilly Co. to the Kaseno Products Co. is a standard article of commerce and has been for a long period of time prior to the application for or the issuance of the letters patents as set forth in plaintiff's bill of complaint.

That any said material so furnished by the defendant Chas. H. Lilly Co. to the Kaseno Products Co. was furnished in response to orders given by the Kaseno Products Co. in the regular course of business and was furnished without any recommendation or knowledge on the part of these answering defendants as to its intended use, save only that it was to be used in the manufacture of some form of adhesive; that these defendants had no control, interest or part whatever in the manufacture of said adhesive nor were these defendants in any way familiar with the processes employed by the Kaseno Products Co. in the manufacture of said adhesive.

Further answering, defendants deny that they have had any connection or part whatever in the manufacture, use, purchase or sale of any of the adhesive materials set forth in said bill of complaint, save and except the furnishing of said soya bean material in the ordinary course of business, as heretofore set forth in this answer. Defendants deny that they have ever done any act or thing or are doing any act or thing or propose doing any act or thing in violation of any alleged right belonging to the plaintiff or secured to it by letters patents referred to in said bill of complaint or that the said plaintiff is entitled to [34] an injunction either preliminary or perpetual, or to an accounting or to any other relief prayed for in said complaint.

WHEREFORE, these answering defendants pray that plaintiff's bill of complaint be dismissed and that said plaintiff may be decreed herein to pay the costs, charges and disbursements of this suit and that defendants have such other and further relief as the premises and the equity of the case may require and as to the Court may seem just.

[Seal] THE CHAS. H. LILLY CO.,
By FARWELL P. LILLY,
Vice President.
WILMOT H. LILLY.
ALLEN & WALTHEW,
Solicitors for Defendants.

Attest:
C. F. LARSEN,
Secretary. [35]

State of Washington,
County of King.—ss.

Farwell P. Lilly, being first duly sworn on oath deposes and says: That he is Vice President of The Chas. H. Lilly Co., another defendant; that he makes this verification on his own behalf and on behalf of the defendant Chas. H. Lilly Co.; that he has read the foregoing answer, knows the contents thereof and that the statements therein are true of his own knowledge, except as to such facts as are stated on information and belief, and as to those he believes them to be true.

FARWELL P. LILLY.

Subscribed and sworn to before me this 11th day of March, 1930.

[Seal] JOHN F. WALTHEW,
Notary Public in and for the State of Washington, residing at Seattle.

Copy received this 17th day of March, 1930.

G. WRIGHT ARNOLD,
RAYMOND OGDEN,
By MATHIS.

[Endorsed]: Filed Mar. 20, 1930. Ed. M. Lakin, Clerk. [36]

[Title of Court and Cause.]

AMENDED ANSWER.

The defendants, Kaseno Products Co., a corporation, and George F. Linquist, now and at all times

saving and reserving unto themselves all benefit and advantage of exception which can or may be had or taken to the errors or uncertainties or other imperfections in said bill of complaint contained, for answer thereto, or unto so much of said parts thereof as said defendants are advised is or are material for them to answer unto, say as follows:

I.

Defendants admit the allegations contained in paragraphs I and II of the bill of complaint.

II.

With respect to paragraph III, defendants admit the jurisdiction of the Court, but deny each of the other allegations contained therein.

III.

With respect to paragraph IV of the bill of complaint, defendants deny that on or before October 29, 1923, or at any time, Irving F. Laucks and Glenn Davidson, of Seattle, were the original or first or joint inventors of any new or useful invention, to-wit: Vegetable Glue and Method of Making Same, purported to be set forth, or claimed, in letters patent of the United States No. 1,689,732, but admit, upon information and belief, that a certain instrument purporting to be letters patent of the United States was issued by the United States Patent Office on October 30, 1928, under Number 1,689,732, upon an application filed by

Irving F. Laucks and Glenn Davidson on October 29, 1923; but defendants are without knowledge as to what further proceedings were [37] had and taken in the matter of said application and therefore deny plaintiff's allegations in reference thereto.

Defendants further deny that the said alleged letters patent were duly or regularly applied for, prosecuted, granted, issued or delivered to said Irving F. Laucks and Glenn Davidson and further deny that thereby there was granted or secured to them, their heirs, legal representatives or assigns any sole or exclusive right to make, use or vend the said alleged invention.

Defendants further deny that the alleged invention, purported to be set forth by said letters patent, was not known or used by others before the alleged invention or discovery thereof by the said Irving F. Laucks and Glenn Davidson; nor patented nor described in any printed publication in this or any foreign country before their alleged invention or discovery thereof or for more than two years prior to the application for said letters patent, nor in public use or on sale in this country for more than two years prior to the said application and not abandoned, and deny each and every other allegation set forth and contained in said paragraph.

IV.

With respect to paragraph V of the bill of complaint, defendants are without knowledge whether on October 22, 1923, said Irving F. Laucks and Glenn Davidson, by a certain instrument in writing by them, did sell, assign, transfer and set over unto I. F. Laucks, Inc., the plaintiff herein, the full and exclusive right, title and interest in and to said letters patent No. 1,689,732, and therefore deny the alleged instrument was duly recorded in the United States Patent Office.

V.

With respect to paragraph VI of the bill of complaint, defendants deny that on or before October 29, 1923, or at any time, Irving F. Laucks and Glenn Davidson, of Seattle, were the original, or first or joint inventors of any new or useful invention, to-wit: Vegetable Glue and Method of Making Same, purported to be set forth, or claimed, in letters patent of the United States Number 1,691,661, but admit that a certain instrument purporting to [38] be letters patent of the United States was issued by the United States Patent Office on November 13, 1928, under Number 1,691,661, upon an application filed by Irving F. Laucks and Glenn Davidson on October 29, 1923; but defendants are without knowledge or information as to what further proceedings were had or taken in the matter of said application and therefore deny plaintiff's allegations in reference thereto.

Defendants further deny that the said alleged letters patent were duly or regularly applied for, prosecuted, granted, issued or delivered to said Irving F. Laucks and Glenn Davidson, and further deny that thereby there was granted or secured to them, their heirs, legal representatives or assigns any sole or exclusive right to make, use or vend the said alleged invention.

Defendants further deny that the alleged invention, purported to be set forth by said letters patent, was not known or used by others before the alleged invention or discovery thereof by the said Irving F. Laucks and Glenn Davidson; nor patented nor described in any printed publication in this or any foreign country before their alleged discovery or invention thereof or for more than two years prior to the application for said purported letters patent, nor in public use or on sale in this country for more than two years prior to the said purported application and not abandoned, and deny each and every other allegation set forth and contained in said paragraph.

VI.

With respect to paragraph VII of the bill of complaint, defendants are without knowledge whether on March 1, 1927, said Irving F. Laucks and Glenn Davidson, by a certain instrument in writing by them, did sell, assign, transfer and set over unto I. F. Laucks, Inc., the plaintiff herein, the full and exclusive right, title and interest in

and to said letters patent No. 1,691,661, and therefore deny the alleged instrument was duly recorded in the United States Patent Office.

VII.

With respect to paragraph VIII of the bill of complaint, defendants specifically deny each and every allegation contained [39] therein.

VIII.

With respect to paragraph IX of the bill of complaint, defendants deny that they have committed or are now committing or threaten to continue committing any wrongful or infringing acts, as further alleged in said paragraph; and deny that they have been notified in writing or have had any knowledge of the grant, issue and delivery of said purported letters patents enumerated in said paragraph IX, and have been warned not to infringe thereon or to manufacture, sell or use adhesives embodying or containing said patented inventions.

With respect to the publication of the Timberman, appearing in said paragraph IX, defendants are without knowledge.

Further answering said paragraph IX, defendants specifically deny each and every other allegation contained therein.

IX.

With respect to paragraph X of the bill of complaint defendants deny each and every allegation

contained therein, and deny that plaintiff has been damaged to the sum of $100,000.00 or in any sum or amount whatsoever.

Defendants, further answering said bill of complaint, by way of affirmative defenses thereto, allege as follows:

(a) That the alleged new and useful inventions for adhesives, purported to be set forth in each of said alleged letters patents, were not patentable inventions or discoveries under the Patent Laws of the United States, in view of the known state of the art, and defendants, upon information and belief, aver that the alleged inventions or discoveries purported to be set forth in each of said alleged letters patents were well known and used prior to the alleged discovery or invention thereof by Irving F. Laucks and Glenn Davidson;

That adhesive compositions embodying and showing substantially the alleged inventions of Irving F. Laucks and Glenn [40] Davidson are further shown by various publications and letters patents issued prior to the alleged discoveries or inventions of Irving F. Laucks and Glenn Davidson, and more than two years prior to the filing of their application for patents;

That the creation of said alleged inventions came about solely through the exercise of ordinary skill; that any subsequent elaborations by way of execution of further plans and preparation of specifications of letters patents involved no more than

the exercise of ordinary skill, and that said purported letters patents, as a consequence, are invalid and void.

(b) That all material or substantial parts of said alleged inventions, as described in the specification and defined by the claims, are described in divers publications and letters patents in the United States and foreign countries prior to the date of the purported inventions thereof by the said Irving F. Laucks and Glenn Davidson, and more than two years prior to the filing of their applications for patents, including the following:

LETTERS PATENTS:

Number		Name	Date
1,245,975		Satow	Nov. 6, 1917
140,911	(British)	O'Gorman	Apr. 8, 1920
828,785		Isaacs	Dec. 18, 1906

PUBLICATIONS:

Scientific essays of Dr. Sadakichi Satow (then Professor of the Imperial University of Japan, also patentee of many patents listed herein under the name of Satow) published monthly from October, 1919 to and including September, 1920 in Kogyu Kagaku Zashi (Journal of Industrial Chemistry) published by Kogyu Kagaku Kai (the Society of Industrial Chemistry) a monthly periodical published at Tokyo, Japan, and delivered to all parts of the world; and more particularly the following portions of the essays.

November 1919 pps. 58, 69.
January 1920 pps. 2, 6, 12, 13.
May 1920 pps. 429-438.

each of the monthly essays applying to Soya Beans and the industrial and commercial uses thereof; portions of which essays have been translated and printed in English in two separate publications, as follows:

"Research on Oil and Proteids Extraction from Soy-Bean" by Sadakichi Satow, from the Technology Reports of the Tohoku Imperial University, Vol. II, No. 2 (Reprinted October, 1921); "Manufacture of Plastic Products from Proteid of Soy-Bean" by Sadakichi Satow, from the Technology Reports of the Tohoku Imperial University, Vol. III, No. 4. (Reprinted June, 1923):

(c) Defendants aver that said letters patents of [41] Irving F. Laucks and Glenn Davidson are wholly invalid and void because, for the purpose of deceiving the public, the specifications and claims filed by applicants, Irving F. Laucks and Glenn Davidson in the Patent Office were made to contain less than the whole truth relative to their inventions or discoveries; that the protein of the soya bean, and other seeds, is practically identical with the protein of milk, and the art of making high water-resistant adhesive compositions from casein is old; not only is the art of making high water-resistant adhesive compositions from casein old, but the art of making such high water-resistant adhesives, con-

sisting of caustin soda, lime, and equivalents, copper sulfate, cuprammonium compounds, copper-caustic soda compounds, and equivalents, tanning agents, sodium silicate, and equivalents, rosin, and equivalents, sulphur containing compounds, such as carbon bisulphide and equivalents, sodium phosphate, sodium perborate and sodium sulphite, and equivalents, and the combination of such salts as above enumerated with a weak acid, is old; therefore the substitution of proteins of the soya bean and other seeds for casein in which these common and well known water-proofing agents are employed is merely adapting an old art to an equivalent material; that casein reacts similar to soya bean protein in substantially all respects and is, therefore, a direct substitute and an equivalent.

(d) Defendants aver that said letters patent of Otis Johnson and of Irving F. Laucks and Glenn Davidson are wholly invalid and void because, the description of the invention in the specifications are not in such full, clear, concise, and exact terms as to enable any person skilled in the art of science to which it appertains or with which it is most nearly connected, to make, construct, compound, and use the same.

(e) OTHER PUBLICATIONS:

A paper read by Dr. Oskar Nagel at the Chemists' Club in New York City on Nov. 20, 1903, entitled "On Vegetable Protein", wherein a portion of said paper was devoted to a discussion of Vegetable

Casein; said paper, as read by Dr. Nagel being subsequently printed in the Journal of the Society of Chemical Industry on December 31, 1903 in Volume 22, pages 1337 and 1338, said journal referred to being published in England and having general circulation at that time in both England and the United States; that said paper dealing with vegetable casein was, later on, published in book on "Casein, Its Origin, Preparation and Properties" which book was composed by one, Robert Shearer. The book referred to was first published in 1905 in a German edition, 1906 English edition, 1911 2nd [42] English, revised and enlarged edition and 1921 3rd revised and enlarged edition. The article is herein set forth as follows, to-wit:

"For making vegetable casein, which, in its solubility, viscosity, and other properties, is equal to milk casein, I use soy-bean, which, until now, has not been used in chemical industries. This seed, being the richest casein-containing seed produced by nature, and at the same time exceedingly cheap, can be imported from China in any quantity desired. It contains 12 to 18 per cent. of an excellent edible oil, largely used in the Orient, and 30 to 40 per cent. casein. The richness in fat decreases the expense of the process considerably. For making casein the finely-ground beans are extracted nearly completely by means of benzine or any other solvent in an apparatus ordinarily in use for that purpose. Hydraulic presses may also be employed for removing the oil, but in this case the residuum will natu-

rally be richer in fat than if worked by extraction. The residue, freed from benzine, is digested at a temperature of 30° to 35°, with a 5 per cent. solution of sodium carbonate for several hours, solution being assisted by maens of stirring. The solution is then filter-pressed.

The casein is now precipitated from the filtered alkaline casein solution, with continuous stirring, by means of rennet or a 5 per cent. solution of hydrochloric acid. The precipitated casein is filtered, washed, and dried in a steam-heated room at as low a temperature as possible. The benzine is removed in the extraction apparatus mentioned above, from the solution of oil in benzine, obtained in the first part of the process, and used over again."

A publication in the supplement to the Scientific American Supplement No. 1859, page 115, issued Aug. 19, 1911; said article being entitled "Extended Utilization of Soya Bean Products." The article is set forth herein as follows, to-wit:

"The Soya Bean, of whose growth and properties the Scientific American recently gave some account, is attracting increasing attention abroad because of the economic and commercial value of the products obtainable from it. Some of these preparations are important because of their alimentary value and others from [43] their industrial application.

Many Europeans have been studying the best methods of extracting the nutritive principal contained in these seeds and preserving it in con-

centrated form, with a view to its availability as part of the rations of armies and particularly of colonial troops.

A Japanese chemist, Karajama, has succeeded in preparing a concentrated "milk," a flour on the order of the Nestle preparation, and biscuits which give a maximum of alimentation with a minimum of volume.

A Chinese factory has been established not far from Paris for the purpose of manufacturing alimentary products from Soya, and it has already put upon the market Soya flour, Soya bread, Soya sauce, Soya milk, Soya cheese, preserves, fermented milk, etc.

The Indo-Chinese prepares from this plant a condensed milk, a flour, a form of Casein which constitute essential elements of the food supply of the populace.

Recently, moreover, successful experiments have been made, with this vegetable casein as a substitute for animal casein in the various industrial applications, in which the latter has been increasingly utilized.

The well-known chemist inventor, F. J. G. Beltzer, who has made careful study of the whole subject, publishes in the Revue Scientifique, a report of whose most important features we present an abstract, while omitting purely technical details of analysis and manufacture.

In the preparation of industrial casein, the imported casein made in Indo-China by the natives can be used by subjecting it to a process to remove the fatty matter contained, but it is found commercially advisable, because cheaper, to treat the raw product directly.

A quantitative analysis of 100 grams of the raw grain gave the following results:

Dry casein	25.55	Grains
Oils and fatty bodies	16.42	"
Dry residuary cake	29.80	"
Husks	7.85	"
Dust and impurities	7.90	"
Moisture	12.35	"
Total	99.87	" [44]

In Cochin-China and Annam the chief food products made from Soya are vegetable milk and vegetable cheese.

The milk is obtained by crushing the previously well-soaked seeds and then macerating in about ten times their weight of water, thus obtaining a thick milky liquid. Cold water must be used, as otherwise the vegetable albumen will be coagulated and cannot be extracted.

This milk should be filtered and drunk fresh or used for making different sorts of cheese, as in the case of cows' milk or goats' milk, while the compressed cake left after filtering forms a nourishing fodder for animals.

To make the cheese, the vegetable milk is treated with a mineral salt, or an acid, which acts the part of rennet, coagulating the milk into a curd, which is drained, and washed like the curd from ordinary milk.

In Indo-China the milk is coagulated by boiling and by the addition of a powder called Tehach-Kao, which consists of a calcined selenite. A very small quantity of this causes the complete coagulation of large quantities of milk.

The cheese is usually consumed fresh on the same day it is prepared, but can also be preserved by smoking and by salting.

In Annam there are three principal varieties of this cheese:

1. The fermented variety, of a gray or yellow color, and a taste suggesting Roquefort.

2. The white or salted variety, resembling goat's milk cheese.

3. The cooked or smoked variety, which looks like Gruyere.

In the market of Saigon the Chinese sell these white or cooked cheeses to the natives at the modest price of 10 centimes per livre. This is about one-tenth the price of Gruyere, which indicates the economic value of this highly nutritious food and suggests the [45] possibility of its future commercial importance.

For purely industrial applications it is necessary, as we have said, that the vegetable casein be entirely free from fatty matters.

In the industrial treatment of Soya, therefore, the process is somewhat different. The three objects sought are: the pure oil, the casein entirely free from oil, and the residuary cake.

The oil is extracted by pressing, and two grades are obtained. The first or purest is sold for edible purposes, while the second is useful for soap making and other manufactures where oils and fats are employed. The first-pressure oil is worth about 1.5 francs per Kilo, while the second-pressure product brings only about 0.7 francs per kilo.

The pure casein is prepared from the pulp which remains after the extraction of the oil. The milky liquid obtained by triturating the pulp with cold water, is filtered and treated with powdered gypsum. About one kilo of gypsum per 1000 liters of the liquid is used. The mixture is brought to a boil and the resulting coagulate is drained and washed in cloth filters. The casein thus obtained is dissolved in a quantity of very dilute soda solution, so weak that the reaction is either neutral or very slightly alkaline. The solution is filtered and then precipitated by acetic acid. The finely divided precipitate obtained is filtered out, washed on the filter and finally dried at a low temperature.

The casein thus obtained is white, and from an industrial point of view, very pure. It is insoluble

in water, but soluble in dilute caustic alkalies and in ammonia. It exhibits almost precisely the same properties as the casein obtained from ordinary milk. It is found on expirement to be susceptible of the same industrial applications as animal casein, and may come to largely supersede this because of lower cost.

Among the various uses to which it may be applied we may mention its employment in painting, and for the preparation of products having a resistance to a moisture. [46]

It may be used also for the sizing of paper, which consumes such large quantities of ordinary casein. Being soluble in ammonia and caustic solutions it is capable of forming a smooth and solid size.

Other uses are in certain manufacturing processes in the preparation of silks and artificial textiles, as well as of rubber, leathers, plastic materials, films, photographic emulsions, etc. Large amounts of animal casein are at present employed in the manufacture of 'galalith,' from which are made numerous objects which imitate articles made from ivory, tortoise-shell, bone, horn, etc. The Soya casein, when free from fats, is equally well adapted for these purposes.

Formol acts upon this casein in the same way as an ordinary casein, rendering it insoluble. Hence it may be used for the water-proofing of fabrics, straw hats, etc., as well as for the preparation of sizes and dressings.

Chevalott gives a formula for the foregoing purposes.

To 40 parts of casein in 200 parts of water is added dilute milk of lime (1 part CaO), 20 parts of soap, and 240 parts of water. The fabric is impregnated with this solution and then dried, afterwards being passed through a bath of aluminium acetate. It is then washed with water at 90 deg. C. and dried.

Straw which is impregnated with an ammoniacal solution of vegetable casein, then dried and finally subjected to formaldehyde vapors at a temperature of 80 deg. to 90 deg. C., becomes impermeable to water.

A solution of vegetable casein and borax can be successfully utilized in the process of calico printing.

It will be seen from the foregoing resume that the fabrication of vegetable casein for industrial purposes has immense possibilities, only exceeded in importance by the alimentary value of its food products for man and beasts.

The residuary cake left after the extraction of both oil and casein still retains sufficient nutritive qualities to be useful as an addition to the feed of animals." [47]

Cements, Glues, Pastes, Muscilages and Adhesives, Chapter 6, pages 271 to 336, appearing in Scientific American, Cyclopedia of Formulas, by

Hopkins, published in English by Munn & Co., Inc., of New York in 1911.

Soya-Bean Curd, an Important Oriental Food Product, taken from the Philippine Journal of Science, 1912, A., Volume 7.

A Textbook of Paper Making by C. F. Cross and E. J. Bevan, 3d Ed., published by E. & F. N. Spon. Ltd., London, and Spon & Chamberlain, New York, 1907, p. 23.

Wood Pulp by C. F. Cross and others, published by D. Van Nostrand Company, New York, 1911, pp. 38-40, 45, 50-51, 242-249.

Cellulose by C. F. Cross & E. J. Bevan, published by Longmans, Green & Company, London, 1916, pp. 25-27, 247-248, 318.

Chemistry and Technology of Gelatin and Glue, by R. H. Bogue, published by McGraw Hill Company, New York, 1922, pp. 319-344.

Cellulose, Cellulose Products and Artificial Rubber, by Bersch (authorized translation from German 1904) pp. 14-15, 16, 119-161.

Nitrocellulose Industry, E. C. Worden, published by D. Van Nostrand Company, New York, 1911, Vol. 2, pp. 1055-1113.

Bulletin No. 439, U. S. Dept. of Agriculture, Dec. 22, 1916. [48]

(f) Also in many other letters patents and publications not definitely known to the defendants, definite allegations concerning which, when dis-

covered hereafter, defendants pray leave of Court to incorporate herein by suitable amendment hereto.

(g) That during the pendency in the U. S. Patent Office of the aforesaid applications of Irving F. Laucks and Glenn Davidson, that subsequently matured into patents, said applicants so limited the claims of their patents in order to obtain favorable consideration of the same, that they cannot now ask for or obtain an interpretation of these claims which will bring the other defendants adhesive composition complained of within the scope thereof; that, in view of prior patents hereinbefore and hereinafter specifically referred to, the claims in suit must be so restricted as to exclude the other defendants adhesive composition from the purview thereof; such prior patents defendants aver are the full equivalent of plaintiff's patents, such patents being as follows:

Number		Name	Date
1,020,656		Perkins	Mar. 19, 1912
1,357,310		Bloede	Nov. 2, 1920
838,785		Isaacs	Dec. 18, 1906
1,078,692		Perkins	Nov. 18, 1913
1,273,571		Bloede	Jul. 23, 1918
140,911	(British)	O'Gorman	Apr. 8, 1920
1,321,480		Satow	Nov. 11, 1919
1,427,645		Satow	Aug. 29, 1922
1,321,479		Satow	Nov. 11, 1919
1,456,842		Butterman	May 29, 1923
689,023		Reigel	Dec. 17, 1901
1,412,020		Stern	Apr. 4, 1922
1,267,699		Robinson	May 28, 1918
1,373,412		Craver	Apr. 5, 1921
1,244,463		Brabrook	Oct. 30, 1917
845,791		Isaacs	Mar. 5, 1907
621,579		Marsden	Mar. 21, 1899
223,459		Vining	Jan. 13, 1880
86,398		Hirsh	Feb. 2, 1869
650,003		Bremer	May 22, 1900
725,816		Bartels	Apr. 21, 1903
883,995		Weichmann	Apr. 7, 1908
932,527		Weichmann	Aug. 31, 1909
1,016,115		Walland	Jan. 30, 1912
1,437,487		Biddle	Dec. 5, 1922 [49]
1,466,241		Naemura	Aug. 28, 1923
22,788	(British)	Ellis	1898
19,853	(British)	Kelly	1910
3,338	(British)	Stern et al.	1915
26,155	(British)	Chaviossieu	1908
8,203	(British)	Triester et al.	1910
12,890	(British)	Eberhard	1908

Number		Name	Date
148,216	(British)	Knorr	Jul. 28, 1921
186,157	(British)	Schryver	Mar. 20, 1922
375,767	(French)	Plinatus	Jul. 23, 1907
461,287	(French)	Mercier	Dec. 24, 1913
377,838	(German)	Heinrich	June 28, 1923
16,477	REISSUE	Biddle	Nov. 16, 1926
845,790		Isaacs	Mar. 5, 1907
90,301	(German)	Knorr	Aug. 13, 1917
1,064,841		Yu Ying Li	June 17, 1913
30,275	(British)	Yu Ying Li	Feb. 29, 1912
1,245,980		Satow)	
1,245,891		Satow)	Nov. 6, 1917
1,245,982		Satow)	
984,539		Chavassieu	Feb. 21, 1911
1,280,861		Satow)	
1,280,862		Satow)	Oct. 8, 1918
830,493		Collardon	Sept. 11, 1906
950,435		Chavassieu	Feb. 22, 1910
26,928	(British)	Lilienfeld	1910
241,897		E. R. Von Portheim	May 24, 1881
414,775		A. Depont & S. DePont	1891
632,195		W. W. McLaurin	Aug 29, 1899
601,995		Felix Bauer	Apr. 5, 1898
1,143,893		Dod & Humphries	June 22, 1915
28,307	(Japanese)	Satow)	
33,092	(Japanese)	Satow)	Aug. 14, 1918
33,018	(Japanese)	Satow)	1918
31,331	(Japanese)	Ishii	Jul. 14, 1917
192,344	(German)	Sadikoff	Jan. 4, 1906
349,885	(French)	Societe Dite Le Fibrocol	1905

Further answering, defendants deny that they have done any act or thing or are doing any act or thing or propose doing any act or thing in violation

of any alleged right or otherwise belonging to the plaintiff or secured to it by letters patents above referred to, or that the said plaintiff is entitled to an injunction either preliminary or perpetual or to an accounting, or to any other relief prayed for in said complaint.

WHEREFORE, these answering defendants pray that plaintiff's bill of complaint be dismissed and that said plaintiff may be decreed herein to pay the costs, charges and disbursements of this suit and that defendants have such other and further relief as the premises and the equity of the case may require [50] and as to the Court may seem just.

KASENO PRODUCTS CO.,
By GEO. F. LINQUIST.

[Corporate Seal]

Attest:
J. Y. C. KELLOGG,
Secretary.

J. Y. C. KELLOGG and
RICHARD J. COOK,
Solicitor for Defendants.

State of Washington,
County of King.—ss.

George F. Linquist, being first duly sworn on oath, deposes and says: That he is one of the above named defendants and president of the Kaseno Products Co., another defendant; that he makes this verification on his own behalf and on behalf of said Company; that he has read the foregoing answer,

knows the contents thereof and believes the same to be true.

GEO. F. LINQUIST.

Subscribed and sworn to before me this 28th day of February, 1930.

[Seal] J. Y. C. KELLOGG,
Notary Public in and for the State of Washington, residing at Seattle.

[Endorsed]: Filed Feb. 28, 1930. Ed. M. Lakin, Clerk. [51]

NaOH No. 659
Pltf. Ex. 14.
Adm. 4/29
N. 1689732

The United States of America,
To All to Whom These presents shall come:

WHEREAS, Irving F. Laucks and Glenn Davidson, of Seattle, Washington, assignors to I. F. Laucks, Inc., of Seattle, Washington, a corporation of Washington, presented to the Commissioner of Patents a Petition praying for the grant of Letters Patent for an alleged new and useful improvement in Vegetable Glue and Methods of Making Same, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and complied with the various requirements of Law in such cases made and provided, and

WHEREAS, upon due examination made the said Claimants are adjudged to be justly entitled to a patent under the Law,

Now therefore these Letters Patent are to grant unto the said I. F. Laucks, Inc., its successors or assigns for the term of seventeen years from the date of this grant the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this thirtieth day of October, in the year of our Lord one thousand nine hundred and twenty-eight, and of the Independence of the United States of America the one hundred and fifty-third.

[Seal] THOMAS E. ROBERTSON,
Commissioner of Patents.

Attest:
G. P. TUCKER,
Law Examiner. [52]

Patented Oct. 30, 1928. 1,689,732

UNITED STATES PATENT OFFICE.

Irving F. Laucks and Glenn Davidson, of Seattle, Washington, Assignors to I. F. Laucks, Inc., of Seattle, Washington, a Corporation of Washington.

Vegetable Glue and Method of Making Same.

No Drawing.

Application filed October 29, 1923.

Serial No. 671,381.

The art of making a water-proof glue from certain protein materials has been known for some time; thus casein and blood albumin are in common use. These last mentioned compounds, however, have a number of disadvantages from a practical standpoint. Casein is costly and lack of uniformity in the material as derived from various sources is a serious detriment; while blood albumin is not available except in certain situations. There is accordingly a great demand, particularly in the veneer industry where large quantities of glue are consumed, for a new glue that will be cheap and at the same time sufficiently water-proof.

By water-proof, in this connection, it is not meant that glues thus characterized will resist the action of water indefinitely, but it is meant that they are water-proof in the sense in which the term is used in the veneer industry, viz., that a panel can be soaked in cold water for from seventy-two to one hundred hours, or in boiling water for eight hours, without separation.

Vegetable compounds have not, so far as we are aware, been heretofore satisfactorily employed as a basis for waterproof glues of the type in question. It is true that some veneer makers, on account of the high price of casein, have come to use starch glues but these, at least as heretofore made, are not at all water-proof, and vegetable proteins have not heretofore been used at all, so far as we are aware.

We have now discovered, however, that by subjecting the same to proper treatment, such vegetable proteins or vegetable matter containing proteins in proper amount can be converted into a water-proof glue that will satisfy the rigid requirements of veneer or ply-wood making. The requisite raw material may be derived from a number of sources and the treatment of such material is relatively simple and inexpensive so that as a result we are able to produce a satisfactory glue at a much lower cost than has heretofore been possible.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the combination of ingredients or composition of matter and the steps involved in the preparation of such composition hereinafter fully described and particularly pointed out in the claims, it being understood that such disclosed ingredients and steps constitute but several of the various ways in which the principle of the invention may be used.

We have found that soya bean flour constitutes an admirable raw material for our purpose. Such flour is preferably made by grinding soya bean cake so that 80 per cent will pass a 100 mesh screen and when treated with certain chemicals, or other substances, we make therefrom a very satisfactory glue that meets the requirements of the veneer trade fully and is in many respects better than the usual glues now on the market. Such bean cake, as analyzed by us, is found to contain on the average 45 per cent protein, 12 per cent water, 5 per cent cellu-

lose or crude fiber, 7 per cent oil, 6 per cent ash, and 25 per cent carbohydrates.

We do not, however, wish to limit ourselves to soya bean flour or to vegetable protein derived from this source for we have made satisfactory glue by our improved process from similar seed flours, or protein matter derived from such, in which there is a considerable protein content, examples of which are linseed flour, cotton seed flour, and the like; that is, soya bean flour gives the best results, but other sources of vegetable protein-containing material may be employed with proportionately advantageous results.

Soya bean flour made from soya bean cake from which the oil has been expressed, is preferably used in practice because it is cheaper and makes a better glue, but flour made from whole soya beans, without expressing the contained oil, may also be used, although obviously this would not be economical in view of the value which attaches to such oil. As to the fineness of the flour, it is not necessary that the meal be ground as fine as indicated above, but fineness is desirable from a practical standpoint.

When the usual chemicals employed in making casein glue, viz., lime and sodium silicate, are added to a vegetable protein-containing material, for example, soya bean flour, a glue results, but it is not as good as casein glue. It is not as highly water resistant nor as workable. We find, however, by the use of caustic soda with such vegetable protein-containing matter, a much better glue is obtained,

such caustic soda apparently playing the part of dispersing the colloidal material. The resultant glue is then somewhat similar in its working properties to casein glue, although its water resistance is still slightly less.

In practice, there is a great difference [53] between vegetable protein-containing glues made up by treatment with caustic soda as such and glues made by treatment with lime and sodium salts which by interaction may produce caustic soda. We do not at present know just why this difference exists, but it may be due to the presence of colloids, and the vegetable protein interfering with the expected interaction.

Preferably we react on our vegetable protein-containing material with both caustic soda and lime. As equivalents of such caustic soda, caustic potash *and ammonia* may be used, although more expensive. *Other equivalents of caustic soda are salts of soda (or potash) with weak acids, e. g., sodium phosphate, sodium borate and the like.* Similarly in place of lime, *magnesia,* baryta and strontia may be used as equivalents.

In order to improve what may be termed the working properties, of the glue produced as aforesaid as well as the water resisting properties, we have found it desirable to add other substances of which the following are examples:

Copper sulfate, cuprammonium compounds, copper caustic soda compounds. Equivalents would be other water soluble compounds of copper.

Quebracho, sumach, spruce extract (concentrated sulfite liquor). These are all commonly used tanning agents. Equivalents would be other vegetable tanning agents.

Sodium silicate, or other soluble silicates.

Rosin, sodium or calcium salts of rosin. Equivalents would be other resin or resin combinations with metals.

In general, we may say that copper salts make the glue more readily workable while at the same time increasing the water resistance; that the silicates and related compounds act as thinners while at the same time increasing the water resistance and the strength of the glue; and that rosin and derivatives thereof act as thinners and make the glue more readily workable. Substances such as the foregoing, which act as a thinner, or render the glue more readily workable, may be appropriately referred to as spreaders.

We have also found that certain substances will act *in the same way as the caustic soda and also* as thinners, e. g., sodium phosphate, sodium, perborate and sodium sulphite. These salts are all related in that they are combinations of a strong base with a weak acid (as contrasted with a strong acid), and in that sense may be included in the category of alkaline materials, and there are a number of other salts that fall in the same category and which have a similar effect, so need not be listed in detail.

As examples we may cite the following typical formulae: in which, unless otherwise noted, ordinary temperatures will be understood to obtain in the mixing operations.

(1) Mix 30 parts soya bean flour, 5 parts rosin, 1½ parts copper sulfate, 1 part quebracho together dry; add 90 parts water and 26 parts 18 per cent caustic soda solution (or expressed more concisely in direct terms, about 4½ parts of caustic soda) stir well; add 6 parts calcium hydrate in 15 parts water; then add 15 parts water glass, giving finished glue.

(2) Mix 30 parts linseed flour, 70 parts water; add 13 parts 18 per cent caustic soda solution (or expressed more concisely in direct terms, about 2 parts of caustic soda) and 4 parts calcium hydrate in 20 parts water.

The particular order in which the several ingredients are admixed together in the formulae just given may be varied, and it is not necessary that the manufacture of the product be completed in a single continuous operation, but as a matter of practice we have found it desirable in certain cases to mix only certain of the ingredients initially and then add the others just before the glue is required for use. Thus, the soya bean flour or the like, the lime and chemicals may be mixed dry, and in this form be shipped to the veneer plant. There the dry material may then be made up with water and caustic soda, and sodium silicate if desired, to the finished glue.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the process herein disclosed or the materials employed in carrying out such process provided the stated ingredients and steps or the equivalent of such stated ingredients or steps be employed.

We therefore particularly point out and distinctly claim as our invention:

1. A vegetable glue composition, comprising the reaction products of a vegetable seed flour of considerable protein content and an alkali metal hydroxide as such in an aqueous medium.

2. A vegetable glue composition, comprising the reaction products of soya bean flour and an alkali metal hydroxide as such in an aqueous medium.

3. A vegetable glue composition, comprising the reaction products of a vegetable seed flour of considerable protein content, an alkali metal hydroxide as such in an aqueous medium, and calcium hydrate.

4. A vegetable glue composition, comprising the reaction products of soya bean flour, an alkali metal hydroxide as such in an aqueous medium, and calcium hydrate.

5. A vegetable glue composition, comprising the reaction products of vegetable seed flour of considerable protein content, caustic soda as such, and calcium hydrate in the proportions of about 30 parts of such flour, about 2–4½ parts of caustic

soda in aqueous solution and about 3–6 parts of calcium hydrate. [54]

6. A vegetable glue composition, comprising the reaction products of soya bean flour, caustic soda as such, calcium hydrate, and an alkali metal silicate, the proportions of the soya bean flour, the caustic soda and the calcium hydrate being about 30 parts of the soya bean flour, about 2–4½ parts of caustic soda in aqueous solution, and about 3–6 parts of calcium hydrate.

7. The process of making a vegetable glue, which comprises treating a vegetable protein flour with an alkali metal hydroxide as such in an aqueous medium, the proportions of such flour and the alkali metal hydroxide being about 30 parts of flour and about 2–4½ parts of said hydroxide in aqueous solution.

8. The process of making a vegetable glue, which comprises treating soya bean flour with caustic soda as such in an aqueous medium, the proportions of such flour and the caustic soda being about 30 parts of the flour and about 2–4½ parts of caustic soda in aqueous solution.

9. A vegetable glue composition, comprising the reaction products of vegetable flour matter having a considerable protein content, caustic soda as such, and calcium hydrate in the proportions of about 30 parts of flour, 13 to 26 parts of an 18% caustic soda solution, and 3 to 6 parts of calcium hydrate.

10. A vegetable glue composition, comprising the reaction products of soya bean flour, caustic soda as such, calcium hydrate, and an alkali metal silicate, the proportions of the soya bean flour, the caustic soda and the calcium hydrate being about 30 parts of flour, 13 to 26 parts of an 18% caustic soda solution, and 3 to 6 parts of calcium hydrate.

Signed by us, this 22d day of October, 1923.

IRVING F. LAUCKS.

GLENN DAVIDSON. [55]

1691661

659 Pltf. Ex. 24

N. Adm. 4/29.

The United States of America

To All to Whom These Presents Shall Come:

WHEREAS, Irving F. Laucks and Glenn Davidson, of Seattle, Washington, assignors to I. F. Laucks, Inc., of Seattle, Washington, a corporation of Washington, presented to the Commissioner of Patents a Petition praying for the grant of Letters Patent for an alleged new and useful improvement in Vegetable Glues and Methods of Making Same, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and complied with the various requirements of Law in such cases made and provided, and

WHEREAS, upon due examination made the said Claimants are adjudged to be justly entitled to a Patent under the Law,

Now therefore these Letters Patent are to grant unto the said I. F. Laucks, Inc., its successors or assigns for the term of seventeen years from the date of this grant the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this thirteenth day of November, in the year of our Lord one thousand nine hundred and twenty-eight, and of the Independence of the United States of America the one hundred and fifty-third.

[Seal] THOMAS E. ROBERTSON,
Commissioner of Patents.

Attest:
G. P. TUCKER,
Law Examiner. [56]

Patented Nov. 13, 1928. 1,691,661

UNITED STATES PATENT OFFICE.

Irving F. Laucks and Glenn Davidson, of Seattle, Washington, Assignors to I. F. Laucks, Inc., of Seattle, Washington, a Corporation of Washington.

Vegetable Glue and Method of Making Same.

No Drawing. Original application filed October 29, 1923, Serial No. 671,381. Divided and this application filed March 9, 1927. Serial No. 174,-093.

The art of making a water-proof glue from certain protein materials has been known for some time; thus casein and blood albumin are in common use. These last mentioned compounds, however, have a number of disadvantages from a practical standpoint. Casein is costly and lack of uniformity in the material as derived from various sources is a serious detriment; while blood albumin is not available except in certain situations. There is accordingly a great demand, particularly in the veneer industry where large quantities of glue are consumed, for a new glue that will be cheap and at the same time sufficiently water-proof.

By water-proof, in this connection, it is not meant that glues thus characterized will resist the action of water indefinitely, but it is meant that they are water-proof in the sense in which the term is used in the veneer industry, viz., that a panel can be soaked in cold water for from seventy-two to one

hundred hours, or in boiling water for eight hours, without separation.

Vegetable compounds have not, so far as we are aware, been heretofore satisfactorily employed as a basis for water-proof glues of the type in question. It is true that some veneer makers, on account of the high price of casein, have come to use starch glues but these, at least as heretofore made, are not at all water-proof, and vegetable proteins have not heretofore been used at all, so far as we are aware.

We have now discovered, however, that by subjecting the same to proper treatment, such vegetable proteins or vegetable matter containing proteins in proper amount can be converted into a water-proof glue that will satisfy the rigid requirements of veneer making. The requisite raw material may be derived from a number of sources and the treatment of such material according to our invention is relatively simple and inexpensive so that as a result we are able to produce a satisfactory glue at a much lower cost than has heretofore been possible.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the combination of ingredients or composition of matter and the steps involved in the preparation of such composition hereinafter fully described and particularly pointed out in the claims, it being understood that such disclosed ingredients and steps constitute but several of the various ways in which the principle of the invention may be used.

We have found that soya bean flour constitutes an admirable raw material for our purpose. Such flour is preferably made by grinding soya bean cake so that 80 per cent will pass a 100 mesh screen and when treated with certain chemicals, or other substances, we make therefrom a very satisfactory glue that meets the requirements of the veneer trade fully and is in many respects better than the usual glues now on the market. Such bean cake, as analyzed by us, is found to contain on the average 45 per cent protein, 12 per cent water, 5 per cent cellulose or crude fiber, 7 per cent oil, 6 per cent ash, and 25 per cent carbohydrates.

We do not, however, wish to limit ourselves to soya bean flour or to vegetable protein derived from this source for we have made satisfactory glue by our improved process from a low grade wheat containing approximately 10 per cent protein and there are many other vegetable materials containing protein in amounts intermediate between the percentages thus noted as found in such soya bean flour and wheat or even lower than the percentage in such wheat that may be utilized with satisfactory results; that is, soya bean flour gives the best results, but other sources of vegetable protein-containing material may be employed with proportionately advantageous results.

Soya bean flour made from soya bean cake from which the oil has been expressed, is preferably used in practice because it is cheaper and makes a better glue, but flour made from whole soya beans,

without expressing the contained oil, may also be used, although obviously this would not be economical in view of the value which attaches to such oil. As to the fineness of the flour, it is not necessary that the meal be ground as fine as indicated above, but fineness is desirable from a practical standpoint.

When the usual chemicals employed in making casein glue, viz., lime and sodium silicate, are added to a vegetable protein-containing material, for example, soya bean flour, a glue results, but it is not as good as casein glue. It is not as highly water resist- [57] ant nor as workable. We find, however, by the use of caustic soda with such vegetable protein containing matter, a much better glue is obtained, such caustic soda apparently playing the part of dispersing the colloidal material. The resultant glue is then somewhat similar in its working properties to casein glue, although its water resistance is still slightly less.

Desirably we employ an agent which responds to the following test, viz., if said agent is placed in dilute water solution, it furnishes hydroxyl ions. Compounds responding to this test are commonly called alkaline compounds and in water solution would provide an alkaline medium. Preferably we react on our vegetable protein-containing material with both caustic soda and lime. As equivalents of such caustic soda, caustic potash and ammonia may be used, although more expensive. Other equivalents of caustic soda are salts of soda (or potash)

with weak acids, e. g., sodium phosphate, sodium borate and the like. Similarly in place of lime, magnesia, baryta and strontia may be used as equivalents.

In order to improve the working properties, e. g., the spreading and flow, of the glue produced as aforesaid as well as the water resisting properties, we have found it desirable to add other substances of which the following are examples:

Carbon bisulphide, calcium polysulphide. Equivalents would be other sulphur compounds of like properties or constitution, such as, for example, sodium thiocarbonate and potassium xanthate, sodium silicate, or other soluble silicates.

In general carbon-bisulphide imparts very great water resisting properties, as does also calcium polysulphide, although to a lesser degree, that is, for good practical effects sulphur-containing compounds like carbon bisulphide which in the composition with the vegetable protein matter provide sulphur derivatives of carbonic acid are most desirably employed,—such sulphur derivatives of carbonic acid constituting a regularly recognized classification in standard chemical authorities, such, for example, as Richter, Organic Chemistry, 1916, Volume I, page 431, and Julius Schmidt, Organic Chemistry, page 298.

In connection with this general treatment, we also bring the vegetable protein-containing matter into a dispersed condition; that is, the state attained

in the transformation of a mealy-like or granular mass to a more or less smooth mass in the presence of a liquid, and to such extent as we thus refer to the degree of subdivision of particles we believe that we are using the term dispersion not inconsistently with the accepted usage of colloid chemists.

We have also found that certain substances will act in the same way as the caustic soda and also render the product of a very desirable consistency, e. g., sodium phosphate, sodium perborate and sodium sulphite. These salts are all related in that they are combinations of the strong base sodium with a weak acid and there are a number of other salts that fall in the same category and which have a similar effect, so need not be listed in detail.

As examples we may cite the following typical formulæ:

1. Mix 30 parts soya bean flour with 120 parts water; add 13 parts of 18 per cent caustic soda solution and mix; 5 parts carbon bisulphide are then added and stirred well; to this 3 parts calcium hydrate are added and stirred in; then 15 parts water glass (sodium silicate) are stirred in; finally, add 1 part copper sulphate to 5 parts of water and stir in. This makes the finished glue, which is then spread on panels, for example, put under pressure for several hours, whereupon the pressure may be released.

2. Dry mix 900 parts peanut flour; 90 parts sodium carbonate; 54 parts lime; and 67½ parts sodium flouride; this dry mixture is added to 1800 parts of water with stirring and then is added 18 parts lime suspended in 15 parts of water and 30 parts of carbon bisulphide; this mixture is again stirred and then to the same is added 2000 parts of water and the stirring continued for about ten minutes which provides the finished adhesive or glue.

3. The dry mixture is the same here as in Example No. 2 excepting cottonseed flour is substituted for peanut flour; to the dry mixture 1500 parts of water are added and 15 parts lime in 15 parts of water and 90 parts of sodium thiocarbonate solution; to this mixture is added 1900 parts of water, stirring the same as in Example 2; the sodium thiocarbonate solution is prepared by dissolving 320 parts of 60 per cent sodium sulphide in 1000 parts of water and adding 260 parts of carbon bisulphide.

4. Dry mix 300 parts of soya bean flour; 65 parts of lime; 30 parts of sodium carbonate; 22½ parts of sodium flouride; and 10 parts of boric acid; to this dry mixture is then added 650 parts of water with stirring; then 25 parts of potassium xanthate is added with stirring; next is added 400 parts of water with stirring which stirring is continued for about ten minutes.

The particular order in which the several ingredients are admixed together in the formulæ just

given may be varied and it is not necessary that the manufacture of the product be completed in a single continuous operation; but as a matter of practice we have found it desirable in certain cases to mix only certain of the ingredients initially and then add the others just before the glue is required for use, [58] that is, the dry ingredients or, as the same may be called, the dry mix of the above examples may be supplied to the user unassociated with the liquid ingredients and the liquid ingredients then added by the user at the time he wishes to prepare the adhesive.

It will also be understood, of course, that the foregoing formulæ are typical and that many variations are actually made therein in the compounding of our improved glue.

This application is a division of our application, Serial No. 671,381, filed Oct. 29, 1923.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the process herein disclosed or the materials employed in carrying out such process provided the stated ingredients and steps or the equivalent of such stated ingredients or steps be employed.

We therefore particularly point out and distinctly claim as our invention:

1. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous alkaline medium, and a small proportion of a sul-

phur-containing compound which provides a sulphur derivative of carbonic acid.

2. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous caustic soda medium, and a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

3. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous caustic soda-lime medium, and a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

4. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous alkaline medium, and a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

5. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous caustic soda medium, and a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

6. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous caustic soda-lime medium, and a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

7. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous

alkaline medium, and a small proportion of carbon bisulphide.

8. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous caustic soda medium, and a small proportion of carbon bisulphide.

9. An adhesive which comprises the reaction products of vegetable protein matter, an aqueous caustic soda-lime medium, and a small proportion of carbon bisulphide.

10. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous alkaline medium, and a small proportion of carbon bisulphide.

11. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous caustic soda medium, and a small proportion of carbon bisulphide.

12. An adhesive which comprises the reaction products of soya bean protein matter, an aqueous caustic soda-lime medium, and a small proportion of carbon bisulphide.

13. An adhesive which comprises the reaction products of soya bean flour, an aqueous alkaline medium, and carbon bisulphide as a water-proofing agent.

14. An adhesive which comprises the reaction products of soya bean flour, an aqueous alkaline medium, and carbon bisulphide, the carbon bisulphide and the soya bean flour being in the propor-

tions of about five parts and about thirty parts respectively.

15. In an aqueous vegetable protein-containing adhesive an ingredient which functions as a water-resistance-increasing agent, the same being the reaction product of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

16. In an aqueous vegetable protein-containing adhesive an ingredient which functions as a water-resistance-increasing agent, the same being the reaction product of carbon bisulphide therewith.

17. In an aqueous soya bean protein-containing adhesive an ingredient which functions as a water-resistance-increasing agent, the same being the reaction product of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

18. In an aqueous soya bean protein-containing adhesive an ingredient which functions as a water-resistance-increasing agent, the same being the reaction product of carbon bisulphide therewith.

19. In the process of making an adhesive, the step of reacting upon alkaline treated vegetable protein matter in an aqueous medium with a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

20. In the process of making an adhesive, the step of reacting upon alkaline treated vegetable

protein matted in an aqueous medium with a small proportion of carbon bisulphide.

21. In the process of making an adhesive, the step of reacting upon alkaline treated soya bean protein matter in an aqueous medium with a small proportion of a sulphur- [59]containing compound which provides a sulphur derivative of carbonic acid.

22. In the process of making an adhesive, the step of reacting upon alkaline treated soya bean protein matter in an aqueous medium with a small proportion of carbon bisulphide.

23. The process of making an adhesive, comprising subjecting vegetable protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

24. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda medium with a small proportion of sulphur-containing compound which provides a sulphur derivative of carbonic acid.

25. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda-lime medium with a small proportion of a sulphur containing compound which provides a sulphur derivative of carbonic acid.

26. The process of making an adhesive, comprising subjecting soya bean protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

27. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda medium with a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

28. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda-lime medium with a small proportion of a sulphur-containing compound which provides a sulphur derivative of carbonic acid.

29. The process of making an adhesive, comprising subjecting vegetable protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of carbon bisulphide.

30. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda medium with a small proportion of carbon bisulphide.

31. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda-lime medium with a small proportion of carbon bisulphide.

32. The process of making an adhesive comprising subjecting soya bean protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of carbon bisulphide.

33. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda medium with a small proportion of carbon bisulphide.

34. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda-lime medium with a small proportion of carbon bisulphide.

35. The process of making an adhesive, comprising subjecting vegetable protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of a liquid sulphur-containing compound which provides a sulphur derivative of carbonic acid.

36. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda medium with a small proportion of liquid sulphur containing compound which provides a sulphur derivative of carbonic acid.

37. The process of making an adhesive, comprising reacting upon vegetable protein matter in an aqueous caustic soda-lime medium with a small proportion of a liquid sulphur-containing compound

which provides a sulphur derivative of carbonic acid.

38. The process of making an adhesive, comprising subjecting soya bean protein matter to an aqueous alkaline medium of a strength which will chemically react with such protein matter in the presence of a small proportion of a liquid sulphur containing compound which provides a sulphur derivative of carbonic acid.

39. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda medium with a small proportion of a liquid sulphur-containing compound which provides a sulphur derivative of carbonic acid.

40. The process of making an adhesive, comprising reacting upon soya bean protein matter in an aqueous caustic soda-lime medium with a small proportion of a liquid sulphur-containing compound which provides a sulphur derivative of carbonic acid.

Signed by us this first day of March, 1927.

IRVING F. LAUCKS.

GLENN DAVIDSON. [60]

CERTIFICATE OF CORRECTION.

Patent No. 1,691,661. Granted November 13, 1928 to IRVING F. LAUCKS ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 37, after the word "xanthate" strike out the comma, insert a period, and capitalize the "s" in "sodium"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of February, A. D. 1929.

[Seal] M. J. MOORE,
Acting Commissioner of Patents. [61]

[Endorsed]: 659. Pltf. Ex. 15. Adm. 5/1.

In re: Patent No. 1,689,732.
In the United States Patent Office.
Granted October 30, 1928.

I. F. LAUCKS, and GLENN DAVIDSON.

For VEGETABLE GLUE AND METHOD OF MAKING SAME.

DISCLAIMER.

To the Commissioner of Patents:

Your petitioner, I. F. Laucks, Inc., a corporation organized and existing under and by virtue of the laws of the State of Washington, having its prin-

cipal place of business at Seattle, Washington, represents that in the matter of the above identified Letters Patent of the United States, it is the assignee of the entire right, title and interest thereto, said assignment having been recorded on October 29, 1923, in Liber I 120, page 299 of Transfers of Patents, and that it has reason to believe that through inadvertence, accident or mistake, and without any fraudulent or deceptive intention, the specification, out of which other applications were divided, was allowed to embody more terms and clauses than correctly applied to the subject matter of the above identified invention retained as the particular invention of the above named Letters Patent. Your petitioner therefore hereby enters this disclaimer to that part of the said specification as is herein below specifically set forth and to any interpretation of the claims which possibly might be interpreted to include any of such disclaimed matter:

Page 2, line 13, cancel "and ammonia." Ammonia is not an equivalent of caustic soda as such and since caustic soda as such is retained as the specific invention of the application serial number 671,381, the reference to ammonia was incorrectly allowed to remain in the said application.

Page 2, lines 14-17, cancel "other equivalents of caustic soda are salts of soda (or potash) with seak acids, e. g., [62] sodium phosphate, sodium borate and the like."

Page 2, line 18, cancel "magnesia."

Page 2, line 51, cancel "in the same way as the caustic soda and also."

The above explanation as set forth relative to ammonia is likewise applicable to the other parts deleted. It was an error to allow the above deleted agents to remain in the specification from which the divisional applications were made, as equivalents of caustic soda as such.

Signed at Seattle, in the County of King, State of Washington, this 22 day of April, 1930.

[Seal] I. F. LAUCKS, Inc.
By I. F. LAUCKS,
President.
By L. W. EILERTSEN,
Secretary.

Witnesses:
C. LINDBERG,
DOROTHY C. WELCH. [63]

Endorsed: #659. Pltf. Ex. 77. Adm. 6-2-30.

390

Department of Commerce
United States Patent Office.

To all persons to whom these presents shall come, GREETING:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of Dis-

claimer, filed May 23, 1930, in the matter of the Letters Patent of Irving F. Laucks and Glenn Davidson, Assignors to I. F. Laucks, Inc.

Number 1,689,732, Granted October 30, 1928,
for
Improvement in Vegetable Glues and Methods of Making Same.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this twenty-ninth day of May, in the year of our Lord, one thousand nine hundred and thirty and of the Independence of the United States of America, the one hundred and fifty-fourth.

[Seal] THOMAS E. ROBERTSON,
Commissioner of Patents.

Attest:
D. ERBILSON,
Chief of Division. [64]

[Endorsed]: Mail Division May 23, '30, U. S. Patent Office.

In the United States Patent Office.

[Endorsed]: $10. Rec'd. May 23, '30. C. C. U. S. Pat. Office.

[Endorsed]: Recorded U. S. Patent Office, Issue Division, May 23, 1930. Liber 1, page 270.

In re: Patent No. 1,689,732
Serial No. 671,381
Filed October 29, 1923
Granted October 30, 1928

I. F. LAUCKS, and GLENN DAVIDSON

For VEGETABLE GLUE AND METHOD OF MAKING SAME

DISCLAIMER

To the Commissioner of Patents:

Your petitioner, I. F. Laucks, Inc., a corporation organized and existing under and by virtue of the laws of the State of Washington, having its principal place of business at Seattle, Washington, represents that in the matter of the above identified Letters Patent of the United States, it is the assignee of the entire right, title and interest thereto, said assignment having been recorded on October 29, 1923 in Liber I 120, page 299 of Transfers of Patents, and that it has reason to believe that through inadvertence, accident or mistake, and without any fraudulent or deceptive intention, the specification, out of which other applications were divided, was allowed to embody more terms and clauses than correctly applied to the subject matter

of the above identified invention retained as the particular invention of the above named Letters Patent. Your petitioner therefore hereby enters this disclaimer to that part of the said specification as is herein below specifically set forth and to any interpretation of the claims which possibly might be interpreted to include any of such disclaimed matter: [65]

Page 1, line 36, cancel "vegetable proteins or."

Page 1, line 72, cancel "or to vegetable protein derived from this source."

Page 2, line 13, cancel "and ammonia." Ammonia is not an equivalent of caustic soda as such and since caustic soda as such is retained as the specific invention of the application serial number 671,381, the reference to ammonia was incorrectly allowed to remain in the said application.

Page 2, lines 14-17, cancel "other equivalents of caustic soda are salts of soda (or potash) with weak acids, e. g., sodium phosphate, sodium borate and the like."

Page 2, line 18, cancel "magnesia."

Page 2, line 51, cancel "in the same way as the caustic soda and also."

The above explanation as set forth relative to ammonia is likewise applicable to the other parts deleted beginning with page 2, lines 14-17 and ending line 51. It was an error to allow the above

deleted agents to remain in the specification from which the divisional applications were made, as equivalents of caustic soda as such.

Your petitioner disclaims any interpretation or construction of the specification or claims of the said patent which brings within the scope or import of the specification or claims of said patent chemically isolated or chemically extracted vegetable protein.

Signed at Seattle, in the County of King, State of Washington, this 15th day of May, 1930.

[Seal] I. F. LAUCKS, INC.
By I. F. LAUCKS,
President.
By L. W. EILERTSEN,
Secretary.

Witnesses:
H. P. Banks,
Dorothy P. Welch.

[Endorsed]: Recorded, U. S. Patent Office, Issue Division, May 23, 1930. Liber 1, page 271.

Endorsed on Reverse side: Fay Oberlin /30 May 29, 1930. [66]

In the District Court of the United States for the Western District of Washington, Northern Division.

[Endorsed]: 659. Pltf. Ex. 10. Adm. 4/30.

No. 621—EQUITY.

I. F. LAUCKS, INC., a Corporation,

Plaintiff,

vs.

KASENO PRODUCTS CO., a Corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a Corporation, and WILMOT H. LILLY,

Defendants.

STIPULATION.

IT IS HEREBY STIPULATED by and between the parties hereto by their respective counsel that the corporations named plaintiff and defendants are corporations organized and existing under and by virtue of the laws of Washington.

IT IS FURTHER STIPULATED that the defendant Kaseno Products Co. is engaged in the manufacture of adhesives or glue and that it has used and is now using in the manufacture of its adhesives or glue, among other things, the following ingredients:

1. Soya bean flour purchased from the defendant Chas. H. Lily Co.
2. Hydrated lime.
3. Trisodium phosphate.

4. Caustic soda as purchased in the market.

5. That up to about February 20, 1929, carbon bisulphide was used.

IT IS FURTHER STIPULATED that the user adds water.

That the motions requiring the answering of interrogatories by Kaseno Products Co., a corporation, and George F. Linquist, is hereby waived. [67]

That defendant George F. Linquist is the president and manager of the Kaseno Products Co.

Dated this 18th day of October, 1929.

G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
Attorneys for Plaintiff,
J. Y. C. KELLOGG and
RICHARD J. COOK,
Attorneys for Defendants Kaseno Products Co. and George F. Linquist. [68]

In the District Court of the United States for the Western District of Washington, Northern Division.

[Endorsed]: 659. Pltf. Ex. 11. Adm. 4/30.

No. 621—EQUITY.

I. F. LAUCKS, INC., a Corporation,
Plaintiff,

vs.

KASENO PRODUCTS CO., a Corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a Corporation, and WILMOT H. LILLY,
Defendants.

STIPULATION.

IT IS HEREBY STIPULATED by and between the parties hereto by their respective counsel that I. F. Laucks, Inc., and Chas. H. Lilly Co., are corporations organized and existing under and by virtue of the laws of the State of Washington.

IT IS FURTHER STIPULATED that Chas. H. Lilly Co., the above named defendant, on and before March 27, 1928, sold and delivered and is now selling and delivering to the Kaseno Products Co., a co-defendant herein, soya bean seed cake ground to glue specifications, that is eighty mesh or finer, for use in the manufacture of the adhesives or glues of said company.

That in view of this stipulation, the plaintiff waives the filing of interrogatories.

IT IS STIPULATED AND AGREED that the foregoing stipulation shall not be construed herein as an admission on the part of the said defendant Chas. H. Lilly Co., that the patents set forth in the complaint herein are valid, nor shall this stipulation be construed as a waiver of any defense the said Chas. H. Lilly Co. may have to any of the patents sued upon herein.

Dated this 25th day of November, 1929.

G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
Attorneys for Plaintiff,
JAY C. ALLEN,
ALLEN & WALTHEW,
Attorneys for defendant
Chas. H. Lilly Co. [69]

(Letterhead of the Chas. H. Lilly Co., Seattle.)

[Endorsed]: 659. Pltf. Ex. 59. Adm. 5/7.

October 17, 1928.

The Arabol Manufacturing Co.,
110 East 42nd St.,
New York, N. Y.
Gentlemen:

We are manufacturers of Soya Bean Flour which is being used extensively on this Coast as a base in waterproof glue. Glue made from this material has almost entirely replaced casein glue in the manufacture of Ply wood or veneer. Formerly the

mills in this territory used practically nothing but casein glue in the manufacture of these panels but have now switched to a Soya Bean glue with which they secure as good or better adhesive at a far lower cost.

We understand you people are the largest manufacturers in the world of various adhesives and the thought occurred to us that if you are not now using Soya Bean flour in any of your products you might be interested in doing a little experimenting along this line. If you are already using this material we would be only too glad to submit samples of our product and quote you prices.

Our material is a true Soya Bean flour in every sense of the word and is not to be confused with various grades of fine ground Soya Bean meal which are sometimes offered. Our material is specially processed to remove a very large percentage of the fiber and is bolted through a flour mill process through a fineness of 100, 109, or 126 mesh. We have sold large quantities to glue manufacturers on the coast here and have shipped some to the glue manufacturers in the furniture district around Grand Rapids, Michigan, and also to various glue manufacturers on the East Coast, and in every case our product has met with their approval as to quality and uniformity, and we know that our prices are in line, and have been getting repeat business from them. We believe that if you are not now using Soya Bean Flour in any of your products it would certainly be to your interest to

investigate its use, and to that end we are glad to furnish you with what samples and information we have on the subject.

Awaiting your reply and trusting that we may be of some service to you, we are

Yours very truly,
LILLY'S-SEATTLE,
(Sgd) S. E. VICTOR,
By S. E. VICTOR.

SEV-PE

[Endorsed]: Rec'd (8:30) Apr. 14, 1930. (Time indicated by time stamp.)

Endorsed on reverse side: Oct. 22, 9:09 A. M., 1928. [70]

(Letterhead of the Chas. H. Lilly Co., Seattle.)

[Endorsed]: 659. Pltf. Ex. 60. Adm. 5/7.

Nov. 1, 1928.

The Arabol Manufacturing Co.,
110 East 42nd St.,
New York, N. Y.

Via Air Mail

Attention, Mr. A. M. Baumann:

Gentlemen:

We thank you for your letter of Oct. 23d and are glad to know that you are interested in Soya Bean Flour. We are sending you a 25 lb. bag of this material as a sample. We are sending you only

the one grade which has been processed through 100 mesh. This is the grade that is in the greatest demand in this section of the country, although we have made some flour as fine as 109 and 126 mesh. The various Glue manufacturers seem to prefer the finer mesh, however they have been buying the 100 mesh inasmuch as the cost is less.

We are pleased to quote you a price of $65.00 per ton F. o. b. Seattle, draft terms, in car lots, on this grade; or $70.00 per ton F. o. b. Seattle, draft terms, in less than car lots.

This is a comparatively new commodity on the market and considering the short length of time it has been used it has gained the approval of Glue manufacturers in this locality. We have been told indirectly that Laucks & Company of Seattle handle hundreds of tons of this material each month, and it is said that they are using it both for Glue and for a wall texture. Several other manufacturers on this Coast and on the East Coast are buying the material in carload lots, and one of these manufacturers who turns out nothing but glue is now using four to five cars monthly. We see great possibilities for the use of Soya Bean Flour in your territory and are pleased that you are taking an interest in it and will undoubtedly do some experimenting. We shall be pleased to hear from you as to what you think of the material and how your experiments work out.

Thanking you for the opportunity of quoting and submitting samples, and trusting that we may be of further service to you, we are

Yours very truly,
THE CHAS. H. LILLY CO.,
(Sgd) S. E. VICTOR,
SEV-PE By S. E. VICTOR.

[Endorsed]: Rec'd Apr. 14, 1930. (Time 8:30 indicated by time stamp.)

[Endorsed on reverse side]: Nov. 5, 9:08 A. M., 1928. [71]

November 16, 1928.

[Endorsed]: 659. Pltf. Ex. 34, Adm. 4/30.

The Charles H. Lilly Company,
1847 West Hanford,
Seattle, Washington.

Gentlemen:

As a matter of information and notice, we wish to call your attention to two patents which have been granted and which are the property of this firm, namely:

No. 1,689,732—Dated October 30, 1928. Covering broadly the Use of Caustic Soda with Vegetable Protein Flours for Adhesive Purposes.

No. 1,691,661—Dated November 13, 1928. Covering broadly the Use of Carbon Bisulphide and like materials with Vegetable Protein Flours for Adhesive Purposes.

This letter is written under advice of counsel as legal notice of the rights of this company under these patents and further notice of the intention of this company to resort to due process of law to enforce these rights against all unlicensed manufacturers, sellers, and users of glue embodying the inventions covered by the above identified patents and against all contributory infringers.

Yours very truly,

I. F. LAUCKS, INC.,

By .....

HPB:DCW Vice-President.

(Post Office Receipt for Registered Article No. 38,403, and Return Card showing delivery of Registered Article No. 38,403 attached to letter.) [72]

[Endorsed]: 659. Pltf. Ex. 118. Adm. 5/28/31.

Certificate

Laucks Laboratories, Inc.
Seattle.

March 25, 1931.
Report No. 42,862.

I. F. Laucks, Inc.

SAMPLE DOPE SUBMITTED

By W. F. Shelley 2/2/31

Marked—Kaseno Dope from Aircraft Plywood Company

Mark on Drum: G 160
T 20
N 140

Return to Kaseno Products Co.

Nitrogen (N)	3.42%
Nitrogen Calculated as Protein	21.37%
Ash	18.81%
Carbon Bisulphide (CS_2) Free	None

No Carbon Bisulphide (CS_2) off on distilling.

On Acidifying and Distilling:

Carbon Bisulphide (CS_2)	3.12% (by weight)
Hydrogen Sulphide (H_2S)	1.00% (by weight)
Wood Fibre	Present
Calcium Oxide (CaO)	Trace
Silica (SiO_2)	0.66%

The solution is strongly alkaline.

Respectfully submitted,

[Seal] LAUCKS LABORATORIES, INC.,

HFR/H By (Signed) H. F. RIPPEY. [73]

United States District Court, Western District of Washington, Northern Division.

No. 621—IN EQUITY.

I. F. LAUCKS, INC., a Corporation,
Plaintiff,

vs.

KASENO PRODUCTS CO., a Corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a Corporation, and WILMOT H. LILLY,
Defendants.

MEMORANDUM DECISION.

No. 659—IN EQUITY.

I. F. LAUCKS, INC., a Corporation,
Plaintiff,

vs.

KASENO PRODUCTS CO., a Corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a Corporation, and WILMOT H. LILLY,
Defendants.

MEMORANDUM DECISION.

Filed June 15, 1932.

G. WRIGHT ARNOLD, 1608 Smith Tower, Seattle, Washington, and RAYMOND D. OGDEN, 1018 Alaska Bldg., Seattle, Washington,
Attorneys for Plaintiff,

J. Y. C. KELLOGG, 828 Central Bldg., Seattle, Washington, and RICHARD J. COOK, 2004 Smith Tower, Seattle, Washington,

Attorneys and Counsel for Defendants Kaseno Products Co., and George F. Linquist,

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Associate Counsel for Defendants Kaseno Products Co. and George F. Linquist,

ALLEN & WALTHEW, Rooms 216-20, 719 Second Ave., Seattle, Washington,

Attorneys for Defendants Chas. H. Lilly Co., and Wilmot H. Lilly. [74]

Plaintiff cites: Abrahams vs. Universal Wire Co., 10 Fed. (2d) 838, 841; American Cone & Wafer Co. vs. Denaro, 297 Fed. 913, 918; American Graphophone Co. vs. Leeds & Catlin Co., 170 Fed. 327, 331; Asbestos Shingle, Slate & Sheathing Co. et al vs. H. W. Johns-Manville Co., 184 Fed. 620, 624; Badische Anilin vs. Kalle, 94 Fed. 163, 170, affirmed 104 Fed. 802; Bankers Utilities Co., Inc., et al vs. Pacific National Bank et al, 18 Fed. (2d) 16, 18; Byerley vs. Sun Co., 184 Fed. 455, 456; Carnegie Steel Co. Ltd. vs. Cambraia Iron Co., 185 U. S. 403 (46 L. Ed. 969); Cochrane et al. vs. Deener et al., 94 U. S. 780, 792 (24 L. Ed. 139, 141); Corona Cord Tire Co. vs. Dovan Chemical Corp., 276 U. S. 358 (72 L. Ed. 611, 614); Cramer vs. Fry, 68 Fed.

201, 206; Diamond Rubber Co. vs. Consol. Rubber Tire Co., 220 U. S. 428, 445 (55 L. Ed. 527, 532); Farbenfabriken of Elberfeld Co. vs. Kuehmsted, 171 Fed. 887, 890; affirmed in 179 Fed. 701; certiorari denied in 220 U. S. 623 (55 L. Ed. 613); Franc-Strohmenger & Cowan vs. Arthur Siegman, Inc., 25 Fed. (2d) 108, 109, 110; affirmed 27 Fed. (2d) 785; Hitchcock vs. American Plate Glass Co., 259 Fed. 948, 952; King vs. Anderson et al., 90 Fed. 500, 502, 503, 504, 505; Lawther vs. Hamilton, 124 U. S. 1, 6, 9 (31 L. Ed. 325, 327); Macon Concrete Roller Co. vs. Brooks-Callaway Co., 272 Fed. 341, 344; Matrix Contract Corporation et al. vs. Kellar, 34 Fed. (2d) 510, 513; J. A. Mohr & Son vs. Alliance Securities Co., 14 Fed. (2d) 799, 800; Norton vs. Llewellyn, 164 Fed. 693, 697; Mineral Separation vs. Miami Copper Co., 237 Fed. 609, 617; Naylor vs. Alsop Process Co., 168 Fed. 911, 917; Peters vs. Union Biscuit Co., 120 Fed. 679, 686; Rumford Chemical Works vs. New York Baking Powder Co., 134 Fed. 385, 386, 387; Schwarzwalder et al. vs. New York Filter Co., 66 Fed. 157; William H. Seymour et al. vs. David M. Osborne, 78 U. S. 516, [75] 560 (20 L. Ed. 33, 40, 42); Skelly Oil Co. vs. Universal Oil Products Co., 31 Fed. (2d) 427; Sporting Goods Sales Co. vs. Haskell Golf Ball Co., 217 Fed. 407, 410; Daniel H. Smith vs. The Goodyear Dental Vulcanite Co., 93 U. S. 486 (23 L. Ed. 952, 954, 955); Tannage Patent Co. vs. Zahn, 70 Fed. 1003, 1004; Tilghman vs. Proctor et al., 102 U. S. 707 (26 L. Ed. 279, 282); Temco Electric

Motor Co. vs. Apco Mfg. Co., 275 U. S. 321 (72 L. Ed. 298, 300); Webster Loom Co. vs. Higgins, 105 U. S. 580 (26 L. Ed. 1177, 1181); Wilson vs. Union Tool Co., 265 Fed. 669; Wisconsin Chemical Co. vs. Chute, 261 Fed. 89, 91; Brush Electric Co. vs. Fort Wayne Electric Light Co., 40 Fed. 826, 835; Busell Trimmer Co. et al. vs. Frank M. Stevens et al., 137 U. S. 423 (34 L. Ed. 719, 723); Carson vs. American Smelting & Refining Co., 4 Fed. (2d) 463, 465, 469; certiorari denied 269 U. S. 555 (70 L. Ed. 409); Chicago Sugar Ref. Co. vs. Chas. Pope Glucose Co., 84 Fed. 977; certiorari denied 170 U. S. 703 (42 L. Ed. 1218); Clairmont Sterilized Egg. Co. vs. Kasser Egg Process Co., 14 Fed. (2d) 143, 144; Clark Thread Co. vs. Willimantic Linen Co., 140 U. S. 481 (35 L. Ed. 521, 525); Coffin vs. Ogden, 85 U. S. 120 (18 Wall. 120); Cohn vs. U. S. Corset Co., 93 U. S. 366, 370 (23 L. Ed. 907, 908, 909, 910); 3 Cokes Institutes; Consolidated Car Heating Co. vs. West End St. Ry. Co., 85 Fed. 662, 665; Corona Cord Tire Co. vs. Dovan Chemical Corp., 276 U. S. 358 (72 L. Ed. 610); 48 Corpus Juris, 28; Crozier Straub vs. Graham, 28 Fed. (2d) 321; certiorari denied 279 U. S. 840 (73 L. Ed. 987); Crozier Straub vs. Maryland Concrete Corp., 39 Fed. (2d) 126; Crozier Straub vs. Reiter, 34 Fed. (2d) 577; Deering vs. Vinona, 155 U. S. 286 (39 L. Ed. 153); A. B. Dick Co. vs. Underwood Typewriter Co., 235 Fed. 300, 305; Downton vs. Yeager Milling Co., 108 U. S. 466, 471 (27 L. Ed. [76] 789, 791); Draper et al. vs. Wattles, 81 Fed. 374; Eames vs. Andrews,

122 U. S. 40, 66 (30 L. Ed. 1064, 1073); Eibel Process Co. vs. Minnesota Ontario Paper Co., 261 U. S. 45 (67 L. Ed. 523, 533, 534); Ensign Carburetor Co. vs. Zenith Detroit Corporation, 36 Fed. (2d) 684, 686; Fairfield vs. Gallatin County, 100 U. S. 47 (25 L. Ed. 544, 547); Frost vs. Cohn, 119 Fed. 505; Gairing Tool Co. vs. Eclipse Interchangeable Counterbore Co., 48 Fed. (2d) 73 at 75; Gayler vs. Wilder, 51 U. S. 476 (10 Howard 477) (13 L. Ed. 504); General Electric Co. vs. Mallory & Co., 294 Fed. 562; affirmed in 298 Fed. 579; General Electric Co. vs. Hoskins Mfg. Co., 224 Fed. 464, 468, 471, 472; Goodwin Film & Camera Co. vs. Eastman Kodak Co., 207 Fed. 351, 360, affirmed in 213 Fed. 231; Hanifen vs. Godshalk Co., 84 Fed. 649, 651; Haynes Stellite vs. Chesterfield, 22 Fed. (2d) 635, 637; Hamolin vs. Harway Dyewood, 138 Fed. 55; Hoskins Mfg. Co. vs. General Electric Co., 212 Fed. 422, 428, affirmed in 224 Fed. 464; Incandescent Lamp Co., 159 U. S. 465 (40 L. Ed. 221, 224); International Cork Co. vs. New Process Cork Co., 6 Fed. (2d) 420; Johnson vs. Aetna Life Ins. Co., 158 Wis. 56 (147 N. W. 32); Johnson vs. Forty-Second Street, M and St. N. Ave. R. Co., 33 Fed. 499, 501; Jones Commentaries on Evidence, 2d Ed. page 34, Sec. 20; Karesh et al. vs. Shell-on Sol-ted Peanut Co., 17 Fed. (2d) 496, 500; Keystone Mfg. Co. vs. Adams, 151 U. S. 139, 144 (38 L. Ed. 103); Kokomo Fence Machinery Co. vs. Kitselman, 189 U. S. 8 (47 L. Ed. 689, 696); Lampus vs. Crozier Straub, 41 Fed. (2d) 746; Longely vs. McCeoch,

80 Atl. 843; McCormick Waterpoor Cement Co. vs. Medusa Concrete W. Co., 222 Fed. 288, 290, 291; Minerals Separation vs. Hyde, 242 U. S. 261 (61 L. Ed. 286, 291); National Electric S. Co. vs. De-Forest Wireless Telegraph Co., 140 Fed. 449, 455; Newall vs. [77] Elliott, 4 C. B. M. S. at p. 293 (140 English Reports 1087 at 1097); O'Reilly vs. Morse, 56 U. S. 62 (14 L. Ed. 601, 622); Pease vs. Chicago & S. Tract. Co., 158 Ill. Appellate 446, 450; Petroleum Rectifying Co. vs. Reward Oil Co., 260 Fed. 177 at 180; certiorari denied 251 U. S. 554 (64 L. Ed. 411); Pittsburgh Iron & Steel F. Co. vs. Seaman-Sleeth Co., 248 Fed. 705, 708; Portland Telegram et al. vs. New England Fibre Blanket Co., 38 Fed. (2d) 780; Railroad Supply Co. vs. Hart Steel Co., 222 Fed. 261, 274; 244 U. S. 294 (61 L. Ed. 1148); Beitman vs. Stratler, 262 Fed. 443, 450; Rawles (ex parte) Commissioners Decisions, 1930; R. C. L. 10, Sec. 202, page 1011; Sampson Granite Co. vs. Crozier Straub, 41 Fed. (2d) 628; Schmertz Wire Glass Co. vs. Western Glass Co., 178 Fed. 977, 988; 185 Fed. 788, 793; Schumacher vs. Buttonlath Mfg. Co., 292 Fed. 522, 529, 547; Sharp vs. Tift, 2 Fed. 697; Simplex Window Co. vs. Hauser Reversible Window Co., 248 Fed. 919, 920; Smith vs. Goodyear Dental Vulcanite Co., 93 U. S. 486 (23 L. Ed. 952, 954, 955); Smokador Mfg. Co. vs. Tubular Products Co., 31 Fed. (2d) 255, 257; Statson Hospital vs. Snook-Roentgen Manufacturing Co., 245 Fed. 654; Schram Glass Mfg. Co. vs. Homer Brooke Glass Co., 263 Fed. 903; Straub vs. Camp-

bell, 259 Fed. 570, 573; Suddard vs. American Motor Co. et al., 163 Fed. 852, 857; Tannage Patent Co. vs. Zahn, 70 Fed. 1003, 1004; Teese, Lewis, & Lewis Teese Jr. vs. C. P. Hungtington and Mark Hopkins, 64 U. S. 2, 14 (16 L. Ed. 479, 482); Terrill on Patents, 6th Ed. 1921, Sweet & Maxwell, Ltd. Law Publishers, page 85; U. S. Industrial Chemical Co. vs. Theroz Co., 25 Fed. (2d) 387, 390, certiorari denied 278 U. S. 608 (73 L. Ed. 534); U. S. Revised Statutes, Sec. 4888 (Title 35, U. S. C. A., Sec. 33); U. S. Revised Statutes, Sec. 4920 (Title 35, U. S. C. A., Sec. 69); Wallerstein vs. Liebmanns [78] Sons Brewing Co., 215 Fed. 915; Walker on Patents, Sec. 260, Vol. I, page 343; Weir vs. Kansas Cy. Ry. Co., 196 Pac. 442; Electro Bleaching Gas Co. vs. Paradon Engineering Co., 12 Fed. (2d) 511, 513; Goodyear vs. Day, Case No. 5569, Vol. 10, Federal Cases; Graham Paper Co. vs. International Paper Co., 46 Fed. (2d) 881, 886; Leeds & Catlin vs. Victor Talking Mach. Co., 213 U. S. 325 (53 L. Ed. 816, 820); Trico Products Corporation vs. Apco-Mossberg Corporation, 45 Fed. (2d) 594, 599; Westinghouse Electric & Mfg. Co. vs. Precise Mfg. Corp., 11 Fed. (2d) 209, 211, 212.

Defendants, Kaseno Products Company and George W. Linquist, in addition to any citations by Plaintiff, cite: Troy Wagon Works Co. vs. Ohio Trailer Co., 264 Fed. 347, 351; Fleischman Yeast

Co. vs. Federal Yeast Corporation, 8 Fed. (2d) 186; De Mayo Coaling Co. vs. Michener Stowage Co., 231 Fed. 736, 737; Majestic Elec. Develop. Co. vs. Westinghouse E. & Mfg. Co., 276 Fed. 676, 681; 48 C. J. 205, 206; 20 R. C. L. 1137; Lorraine vs. Townsend, 8 Fed. (2d) 673; Marvel Buckle Co. vs. Alma Mfg. Co., 180 Fed. 1002; Swain Turbine and Mfg. Co. vs. Ladd, 102 U. S. 408 (26 L. Ed. 184); Parker & Whipple Co. vs. Yale Clock Co., 123 U. S. 87 (31 L. Ed. 100, 105, 106); 48 C. J. 73; Hotchkiss vs. Greenwood, 52 U. S. 261 (11 Howard 248, 13 L. Ed. 683); Dupont vs. Dennison Mfg. Co., 18 Fed. (2d) 317; In re Lobdell (56 App. 91), 10 Fed. (2d) 656; New York Belting Co. vs. Sierer, 149 Fed. 756; Ambursen Hydraulic Construction Co. vs. Hydraulic Properties Co., 211 Fed. 982; Phillips vs. Detroit, 19 Fed. Cases, No. 11,100 (28 L. Ed. 532), 111 U. S. 604; Atlantic Works vs. Brady, 107 U. S. 192 (27 L. Ed. 438); Western Willite Co. vs. Trinidad Asphalt Mfg. Co., 16 Fed. (2d) 446; Rodman Chemical Co. vs. Steel Treating Equipment Co., 288 [79] Fed. 471; Westinghouse vs. Boyden Power Brake Co., 170 U. S. 537 (42 L. Ed. 1136); Tyler vs. Boston, 74 U. S. 327 (19 L. Ed. 93); Beidler vs. United States, 253 U. S. 447 (64 L. Ed. 1006); Stephens vs. Seaher, 11 App. (D. C.) 245; Rohm vs. Martin Dennis Co., 263 Fed. 388; Columbia Motor Car Co. vs. Duerr & Co., 184 Fed. 908; Panzl vs. Battle Island Paper Co., 138 Fed. 48; Great Western Mfg. Co. vs. Lowe, 13 Fed. (2d) 880; Carlton et al. vs. Bokee, 84 U. S. 463 (17 Wall. 463) (21 L. Ed. 517);

Merrill vs. Yeomans, 94 U. S. 568 (24 L. Ed. 235); I. T. S. Rubber Co. vs. Essex Rubber Co., 270 Fed. 593, 600, 601; Robinson vs. Tubular Woven Fabric Co., 248 Fed. 526; Walker on Patents, Volume I, Sec. 427; 48 C. J. 52; Barber vs. Otis Motor Sales Co., 271 Fed. 171; Lemley vs. Dobson-Evans Co., 243 Fed. 391, 396; Consolidated Ry. Co. vs. Adams & Westlake Co., 161 Fed. 343, 350; American Steel Foundries vs. Bettendorf Axle Co., 245 Fed. 571; Sirocco Engineering Co. vs. B. F. Sturtevant Co., 220 Fed. 137; 48 C. J. 40; 48 C. J. 50; Section 4922, R. S. (35 U. S. C. A., Sec. 71, page 613); Hailes vs. Albany Stove Co., 123 U. S. 582 (31 L. Ed. 284); Reed vs. Cutter, Fed. Case No. 11,645; Walker on Patents, Vol. I, Sec. 427; Silsby vs. Foote, 61 U. S. 378 (15 L. Ed. 953); Sessions vs. Romadka, 145 U. S. 29 (36 L. Ed. 609); Shepard vs. Carrigan, 116 U. S. 593 (29 L. Ed. 723); I. T. S. Rubber Co. vs. Essex Rubber Co., 272 U. S. 429 (71 L. Ed. 335); Royer vs. Coupe, 146 U. S. 524 (36 L. Ed. 1073); Vanmanen vs. Leonard, 248 Fed. 939; Marshall & Stearns Co. vs. Murphy Mfg. Co., 199 Fed. 772; Lehigh Valley R. R. Co. vs. Mellon, 104 U. S. 112 (26 L. Ed. 639); Yale Lock Mfg. Co. vs. Greenleaf, 117 U. S. 554 (29 L. Ed. 952); Safety Car Heating & L. Co. vs. Gould Coupler Co., 230 Fed. 848; Yates vs. Smith, 271 Fed. 27, affirmed in 271 Fed. 33, certiorari denied 256 U. S. 693 (65 L. Ed. 1174). [80]

Defendants Chas. H. Lilly Co. and Wilmot H. Lilly cite additional cases as follows: Lane vs. Park,

49 Fed. 454; Houston Electric Company vs. Ohio Brass Works, 80 Fed. 712, 723; Individual Drinking Cup Company vs. Errett, 297 Fed. 733; Edison Electric Light Company vs. Peninsular Light, Power & Heat Company, 95 Fed. 669, 673; Innis vs. Short, Vol. 15, Reports of Patent Cases, page 449; Geis vs. Kimber, 36 Fed. 105.

CUSHMAN, District Judge:

These suits are for the infringement of three patents for cold process glues. In this opinion these patents will be referred to as the "Johnson" patent, the "caustic soda" patent, and the "carbon bisulphide" patent, except where otherwise indicated.

The defendants Kaseno Products Co. and George F. Linquist will be referred to as "the defendants."

JOHNSON PATENT.

The first of the three patents, in time, is the reissue of the Johnson patent of July 3, 1923, reissue number 16,422, original number 1,460,757. Claims 5 and 8 of this patent are not in suit. The claims in suit comprise both product and process claims. Claims 3 and 7 of this patent are as follows:

> "3. An adhesive composition comprising the tacky substance of the soya bean, hydrated lime, and sodium fluoride."

"7. The process of making an adhesive composition which consists in extracting the oil from the soya bean, grinding the residue, and then adding to the finely ground residue, hydrated lime and sodium fluoride."

The defendant Linquist testified:

"A. Do you want the formula for the glue?

Q. From August, 1927. I do not know what you call it. [81]

A. The glue that was turned out, it had soya meal, 65; tri-sodium phosphate, 6; sodium per borate, 1; sodium fluoride, 1; vegetable casein. 10, and lime, 18."

The foregoing shows infringement by the defendants if this patent is valid. Tilghman vs. Proctor et al., 102 U. S. 707, 731; Hoskins Mfg. Co. vs. General Electric Co., 212 Fed. 422, 428; Schram Glass Mfg. Co. vs. Homer Brooke Glass Co., 263 Fed. 903.

Claim 3, it has been contended, is void because the invention of the reissue patent is not the invention taught or disclosed in the original Johnson patent; that the invention disclosed in the original Johnson patent was that the soya bean contains an adhesive constituent which Johnson designated a "tacky substance"; that the file wrapper of the original patent limited the definition of "tacky substance" to nitrogenous matter; that the nitrogenous matter in the soya bean is protein; that there is no disclosure or teaching whatever in the original patent that the tacky substance is soya bean flour.

The plaintiff, after the commencement of these suits, disclaimed chemically isolated protein. No other practical method of isolation has been shown. In the specifications of the original patent it is stated:

> "I have discovered from experiments that a high class waterproof adhesive, such as so-called glue, may be realized from soya beans, or rather the residue derived from soya beans after the oily content of the beans has been extracted. This residue, I have found, contains a highly valuable adhesive constituent which provides an excellent base for an adhesive formula. One feature of the same resides in the fact that *I can use either the residue as a whole,* or else to realize a high grade product, I can extract by any suitable means the adhesive constituent of the residue.
>
> In carrying out the invention, soya beans are first pressed, or otherwise treated, to extract their oily content and the resultant pressed cake is either finely ground, *when the whole of the residue is to be used,* or else it is treated to extract the adhesive constituent when the high [82] grade adhesive is to be produced. This adhesive constituent, *or even the finely ground pressed* cake, may be considered as a base for my formula and the same, on account of its adhesive qualities, I will term a tacky substance." (Italics the Court's.)

In view of this disclosure it is clear the defendants' contention in this particular is not tenable.

Defendants further contend that there was no invention in substituting the protein of the soya bean in place of casein as an adhesive base; that the protein of soya bean, frequently referred to in the prior art as "vegetable casein," is practically identical with the protein of milk, or casein and its equivalent.

Upon this question, even unaided by the presumption in favor of the validity of the patent, the decided preponderance of the evidence is in plaintiff's favor. The evidence shows that with soya bean meal or flour as a glue base there is not the same uncertainty, lack of uniformity or variation in the result as there is with casein. The prior art taught the necessity of the isolation of the adhesive base. Johnson taught this was not necessary and that what had been considered largely a waste material might be used as a valuable glue base. Further reasons why this contention of the defendants is untenable it is not necessary to state.

The defendants further contend that the patent is void because of insufficiency of disclosure.

The patent specifications provide:

> "I have discovered from experiments that *a high class waterproof adhesive,* such as so-called glue, may be realized from soya beans, or rather the residue derived from soya beans preferably after the oily content of the beans

has been extracted. This residue, I have found, *contains a highly valuable adhesive constituent* which provides an excellent base for an adhesive formula. One feature of the same resides in the fact that I can use [83] either the residue as a whole, or else to realize a higb grade product, I can extract by any suitable means *the adhesive constituent of the residue.*

In carrying out the invention, soya beans are first pressed, or otherwise treated, to extract their oily content and the resultant pressed cake is either finely ground, when the whole of the residue is to be used, or else it is treated to extract the adhesive constituent when the *high grade adhesive* is to be produced." (Italics the Court's.)

Defendants contend that if the patent is to be held valid the specifications must fully and completely describe the method of making "this high class waterproof adhesive" and as it does not teach the method of extracting "the adhesive constituent" that the patent is invalid. The plaintiff, having disclaimed chemically isolated protein, and now suing on the claims for the finely ground soya bean cake, after oil extraction, as the adhesive base, this contention is without merit.

Defendants further contend that the patent is void because the claims are too broad, indefinite, abstract, ambiguous and vague; that it is not shown what is meant by "tacky substance" of the soya bean, and because no proportions are stated.

In the specifications it is stated:

"In carrying out the invention, soya beans are first pressed, or otherwise treated, to extract their oily content and the resultant pressed cake is either finely ground, when the whole of the residue is to be used, or else it is treated to extract the adhesive constituent when the high grade adhesive is to be produced. This adhesive constituent, or even the finely ground pressed cake, may be considered as a base for my formula and the same, on account of its adhesive qualities, I will term a tacky substance."

* * * * * * * *

", the tacky substance and the two agents named being mixed in solution. I, of course, do not confine myself to hydrated lime and sodium fluoride, as any other agents having substantially the same characteristic qualities will be sufficient. In fact, entirely different agents may be used, but I have not as yet experimented further than the agents of this character. [84] The hydrated lime is, of course, a waterproofing solvent, and the sodium fluoride is a so-called liquefying agent; in other words, it prevents the compound from drying out. I have found that the following proportions give satisfactory results: About two and one-half to three parts hydrated lime, one part sodium fluoride, about ten parts of the tacky substance, and sufficient water to make up a solution of the desired consistency.

> The term adhesive, or glue, should not be construed in either the specification or claims as limited to the ordinary accepted meaning of the term, as this tacky substance may be used to advantage in calcimine formulas and other instances where a strong adhesive is not necessarily required.
>
> * * * * * * * *
>
> Soya beans, or rather the residue, may be obtained at a very nominal cost and the treatment necessary to either grind the residue when it is used as a whole, or when it is treated to extract the adhesive constituent, is very simple. Consequently the base for the formula is realized without expensive equipment or other high cost."

The foregoing disclosures, in the particulars questioned, are sufficient to teach those familiar with the glue art.

Defendants further contend that the patent is void because of lack of invention in view of the known state of the art and that it was directly anticipated by certain patents and publications. In this opinion throughout only those patents and publications stressed in defendants' brief as anticipations of the patents in suit will be considered. Among the patents claimed to anticipate the Johnson patent are:

United States patents number 1,245,975 to Satow, number 1,143,893 to Dodd and Humphries, number 883,995 and number 932,527 both issued to Wiechmann. These four patents are for plastics rather

than for adhesives. While the plastic art is not one entirely unrelated to the glue art it is not so nearly related as to be an analogous art whose teachings are to be considered a part of the adhesive art.

In the adhesive art—particularly in that part of [85] the art having to do with veneering and the ply-wood industry, which is here involved—while the property of cohesion in the dried glue line itself is important, in that it gives strength thereto, of no less importance is the property of adhesion by virtue of which the glue of the glue line fastens itself to each of the two surfaces between which the glue line is placed. In a plastic, while the property of adhesion may be of value where a foreign substance is carried by the plastic —as in the case of wood carpet—it is not of the same relative importance as in the glue art. These patents do not anticipate the Johnson patent.

The Johnson patent, it is further contended, was anticipated by Japanese patents number 33,092 to Satow and number 33,018 to Kishi and Tanaka. In important particulars there is a dispute between the parties as to the translation of these patents. In view of the difference in the translations and the supporting evidence it can not be said that the defendants have maintained the burden of showing that either of these patents anticipate that in suit.

The patent in suit is claimed to be anticipated by Japanese patent to Ishii number 31,331, United States patent number 1,064,841 to Yu Ling Li,

United States patent number 1,437,487 to Biddle and British patent number 30,275 to Yu Ying Li. None of these four patents are glue patents. The patent to Ishii is for a putty in which soya bean meal is mixed with oil. The patents to Yu Ling Li are for the use of soya beans in the manufacture of foods. The patent to Biddle is for a composition of matter or a compound of the nature of rubber, gutta-percha or balata. Neither of these four patents anticipate the patent in suit.

The following patents it is also claimed anticipate [86] the patent in suit: United States patents number 845,790 to Isaacs, number 1,373,412 to Craver and number 725,816 to Bartels, Swiss patent number 90,301 to Knorr and British patents number 140,911 to O'Gorman and 148,216 to Knorr.

In the patent to O'Gorman the claimed base is an isolated protein.

In the British patent to Knorr the glue base is described as "a protein compound capable of forming salts." The specifications state:

> "The new glue is a mixture of a protein substance capable of forming salts,
>
> * * * * * * * *
>
> Example 2.
>
> * * * * * * * *
>
> The casein can also be used in the form of cheese or curds of milk. Other protein substances forming salts may be used e. q. blood-albumen, glutin, albumoses, etc., in quantities

giving substantially the protein equivalent of the casein used in Example 1."

* * * * * * * *

The substances enumerated—casein, blood-albumen and glutin—are all of animal origin and were familiar in the glue art. If it be assumed that the words of the claim—"a protein compound capable of forming salts"—or the words of the specification "protein substance capable of forming salts," are descriptive of soya bean flour or meal, yet to hold that the patent in suit was anticipated by Knorr would be to give Knorr something which he had in general terms described in his specifications, but which he had not discovered. This the court may not do. The Incandescent Lamp Patent, 159 U. S. 465, 472; Corona Co. vs. Devan Corp., 276 U. S. 358, 385; Holland Furniture Co. vs. Perkins Glue Co., 277 U. S. 245, 257.

The Knorr Swiss patent is not materially different in this respect from the British patent.

In the United States patent to Bartels, number [87] 725,816, while linseed meal was claimed in the patent as a part of the glue base, much the greater part was described in the specifications as ordinary animal glue. This patent is for a hot process glue.

In the United States patent to Craver, number 1,373,412, as in the case of the patent to Knorr, the claim and specifications are too indefinite in the particular to which they are cited.

United States patent to Isaacs, number 845,790, teaches, insofar as the question involved in this case is concerned, the use as a glue base of protein, that is, isolated protein. The specifications state:

> "By my method, I treat the proteid with lime and compounds of hydrofluoric acid, combining the compound of hydrofluoric acid, such as alkaline fluorids, with the proteid,
>
> * * * * * * *
>
> An additional advantage due to my invention is that any ordinary animal and vegetable proteid—such as hide, glue, casein, starch, resin, gums, etc., which are commonly used for glues or sizings—are enriched and made moisture-proof by the use of the ingredients above set forth. The glues or sizings thus made are additionally fast with or without colors, and their quality of being waterproof when dry is also increased."

None of the foregoing six patents anticipate the patent in suit.

It has been further contended that the Johnson patent was anticipated by the publications of Dr. Satow, including one entitled "Research on Oil and Proteids Extraction from Soy-Bean," reprinted from the Technology Reports of the Tohoku Imperial University, Vol. II, No. 2, October, 1921, and another entitled "Manufacture of Plastic Products from Proteid of Soy Bean," reprinted from the Technology Reports of the Tohuku Imperial Uni-

versity, Vol. III, No. 4, June, 1923. In so far as these publications describe an adhesive, such description is limited to the protein of the soya bean. [88] They do not anticipate the patent in suit. Claims 3 and 7 of this patent are held to be valid and infringed.

Claims 1, 2, 4 and 6 are as follows:

> "1. An adhesive composition comprising the tacky substance of the soya bean, and an alkali-metal liquefying agent."
>
> "2. An adhesive composition comprising the tacky substance of the soya bean, and an alkali-metal liquefying agent, and a waterproofing agent."
>
> "4. The method of making an adhesive composition which consists in including therein the tacky substance of the soya bean."
>
> "6. The process of making an adhesive composition which consists in extracting the oil from the soya bean, and adding to the residue an alkali-metal liquefying agent and a waterproofing agent."

The court will not undertake to determine the validity or scope of claims 1, 2, 4 and 6. The issues as to them, while possibly not moot, are so nearly so as to involve in their consideration somewhat the same danger as though they were. Where it is contended that a specific claim has been infringed, there is on the part of neither party to the litigation the same incentive to fully develop the

subject of a general claim as there would be, were not the specific claim alleged to be infringed.

As before stated, claims 5 and 8 are not in suit.

CAUSTIC SODA PATENT.

United States patent number 1,689,732 to Laucks and Davidson is also in suit. The application for this patent was made by assignors of plaintiff in October, 1923, and the patent was granted in October, 1928. There are eight product claims and two process claims. Claims 9 and 10 are not in suit.

Of the ten claims in this patent the odd numbered either describe the glue base as "a vegetable seed flour of considerable protein content," "vegetable protein flour" [89] or "vegetable flour matter having a considerable protein content." In the even numbered claims the glue base is described as "the reaction products of soya bean flour." The claimed infringement in the particular of the glue base rests upon the use by defendants of soya bean flour. The court will not undertake to determine the validity or scope of any of the odd numbered claims for the same reason as that stated concerning claims 1, 2, 4 and 6 of the Johnson patent. The broadest of the remaining product claims is claim 2, which is as follows:

> "2. A vegetable glue composition, comprising the reaction products of soya bean flour and an alkali-metal hydroxide as such in an aqueous medium."

Claim 8, a process claim, is as follows:

"8. The process of making a vegetable glue, which comprises treating soya bean flour with caustic soda as such in an aqueous medium, the proportions of such flour and the caustic soda being about 30 parts of the flour and about 2-4½ parts of caustic soda in aqueous solution."

It has been stipulated:

"IT IS FURTHER STIPULATED that the defendant Kaseno Products Co. is engaged in the manufacture of adhesive or glue and that it has used and is now using in the manufacture of its adhesives or glue, among other things, the following ingredients:

1. Soya bean flour purchased from the defendant Chas. H. Lilly Co.

2. Hydrated lime.

3. Trisodium phosphate.

4. Caustic soda as purchased in the market.

5. That up to about February 20, 1929, carbon bisulphide was used."

The defendant Linquist testified:

"Q. At the present time how many soya bean glues is the Kaseno Products Company putting out?

A. We are making two, commercially.

Q. Do you have a special name for these glues?

A. Yes; one is No. 26 glue, and one is No. 3355.

Q. I will ask you whether or not your No. 26 glue is made up of a mixture of the following ingredients: water, soya bean meal, blood, copper sulphate, caustic soda, hydrated lime, silicate of soda, and viscose? [90]

A. It is.

Q. I will ask you whether or not your glue number 3355 is made up of the following ingredients: water, soya bean meal, caustic soda, hydrated lime, silicate of soda, viscose and hexamethylenetetramin?

A. It is.

Q. Is there hexamethylenetetramin in your No. 26 glue? I omitted that.

A. Yes."

The stipulation and the testimony of the defendant Linquist show infringement of claims 2, 4, 6 and 8 of this patent, if valid. Defendants do not seek to avoid infringement because of a restricted range in the percentage, proportion or relative amounts of the ingredients making up the glue. It is not therefore necessary to consider such question. Fullerton W. G. Ass'n vs. Anderson-Barngrover Mfg. Co., 166 Fed. 443.

It has been contended that the state of the art was such that the use of caustic soda only required the exercise of ordinary skill by those familiar with such art. At the time in question the only glue

base of a vegetable substance with which caustic soda was used was starch. Such prior use, coupled with the fact that it may also have been used in the making of glues other than those of vegetable origin, is not sufficient to overcome the presumption in favor of the validity of the patent.

It has been further contended that the patent was anticipated by earlier patents and publications.

The following patents claimed to anticipate the caustic soda patent have already been considered in connection with the Johnson patent and will not be again considered: United States patent number 1,245,975 to Satow; Japanese patent number 33,092 to Satow; Japanese patent number [91] 31,331 to Ishii and United States patent number 1,373,412 to Craver.

In addition to the foregoing it is contended that anticipation is shown by the British patent number 186,157 to Schryver; the provisional application for such patent and the Johnson re-issue patent, the same being the patent in suit already considered.

Defendants did not give notice of the Schryver patent or of the provisional application as required by Section 4920, Revised Statutes (Title 35, U. S. C. A., Section 69). Teese et al vs. Huntingdon et al., 64 U. S. (23 Howard) 2; Simplex Window Co. vs. Hauser Reversible Window Co., 248 Fed. 919, 920; Morton vs. Llewellyn, 164 Fed. 693, 694. The trial of these cases was begun in April, 1930, and was not concluded until June, 1931. If, be-

cause of the length of time from the beginning until the close of the trial, or for other reasons, the present causes are taken out of the rule of the above statute and cases, it is clear that the Schryver patent is for a plastic and, for the reasons already stated in considering the Johnson patent, does not anticipate the patent in suit. Reaching this conclusion it is not necessary to consider the effect to be given a provisional application for a British patent which, in the case of the Schryver patent alone, ante dates the application for the patent in suit by more than two years.

As already stated, it is also claimed that the caustic soda patent is anticipated by the first patent in suit—the Johnson patent. This contention rests upon the following three grounds. First, that claim 8 of the Johnson re-issue (which claim as before stated is not in suit) teaches the use of caustic soda with soya bean. This claim is as follows: [92]

> "8. In a method of making glue, the steps which consist in treating protein-containing vegetable material derived from the soya bean with an alkali metal compound and lime."

The words of the claim, "an alkali metal compound," it is contended include caustic soda. One of the defendants' principal witnesses, a chemist of note, testified:

> "Q. Do or do not the words 'caustic alkali,' as used by you and other chemists, include both alkali metals and alkali earth metals?

A. Usually we understand it to include caustic soda, caustic potash, caustic ammonium and caustic lime.

Q. Caustic soda being an alkali metal, and lime being an alkali earth metal?

A. Yes, sir."

The words of the claim, "alkali metal compound," are descriptive of caustic soda, an alkali metal hydroxide. But claim 8 of the Johnson re-issue patent is a claim not found in the original. The application for the re-issue was filed after the application for the caustic soda patent. Claim 8 of the re-issue is invalid as it includes new matter—caustic soda—which was not described in the application for the original Johnson patent. The reasons for so holding will be stated in the discussion of the defendants' next point. Therefore, claim 8, insofar as its effect is concerned as anticipating the caustic soda patent, would not relate back to the time of the original Johnson application. Revised Statutes, Sec. 4916 (Title 35, U. S. C. A., Sec. 64, and cases cited under note 53).

Defendants next contend that Johnson taught the use of caustic soda by the following in the specifications of his patents:

"I compound the tacky substance with various other agents which may be those commonly used in the manufacture of adhesives, such as hydrated lime and sodium fluoride, the tacky substance and [93] the two agents named

being mixed in solution. I, of course, do not confine myself to hydrated lime and sodium fluoride, as any other agents having substantially the same characteristic qualities will be sufficient. In fact, entirely different agents may be used, but I have not as yet experimented further than the agents of this character."

Without question caustic soda had been used in the making of starch glues. The court does not find it necessary to determine whether the evidence shows that it had "commonly" been used in the manufacture of adhesives, for the quoted description, "any other agents having substantially the same characteristic qualities" is too general and indefinite to be a teaching of caustic soda. The Incandescent Lamp Patent, 159 U. S. 465.

It is further contended that as the lime and sodium fluoride of the Johnson patent, by double decomposition, form caustic soda, the Johnson patent anticipated the patent in suit. One of the defendants' witnesses, a chemist experienced in the glue of the ply-wood industry, testified:

"Q. (By Mr. Kellogg): Shortly before the recess there was some testimony on your part, I believe, as to hydrated lime and sodium fluoride together creating or making sodium hydroxide?

A. Yes, sir.

Q. Caustic soda?

A. Yes, sir.

Q. Will that reaction take place in the presence of colloids?

A. Yes, sir."

* * * * * * * * * *

"A. When treated with caustic soda the reaction is faster and more thorough in the same length of time than with lime and sodium salts, due to the fact that you must in one case have two reactions taking place, one, a decomposition, or double decomposition between your lime and your sodium salts, producing caustic soda, and then this caustic soda reacting with the vegetable protein-containing material, and in the other case you have your caustic soda added directly, and, therefore, there is less time taken. Otherwise, the action is essentially the same." [94]

Aside from the presumption of validity of the patent in suit and from the presumption arising from the fact that the caustic soda glues drove out the double decomposition glues of Johnson, the foregoing shows that Johnson did not anticipate the patent in suit in this respect.

The two publications of Dr. Satow, claimed by defendants to anticipate the Johnson patent, they also contend anticipate the caustic soda patent and further contend that certain other published articles by Dr. Satow anticipate the caustic soda patent. In the particular in question these articles disclose

nothing further than the use of protein, and do not anticipate the caustic soda patent.

Claims 2, 4, 6 and 8 are held to be valid and to have been infringed.

CARBON BISULPHIDE PATENT.

Latest, in time, of the patents in suit is United States patent number 1,691,661. There are forty claims in this patent. The only ones that claim specifically a glue base of soya bean flour are claims 13 and 14. In the other claims the glue base is described as "vegetable protein matter," "soya bean protein matter," "vegetable protein-containing adhesive" or "soya bean protein-containing adhesive." For the same reasons a ruling was not made concerning the validity and scope of claims 1, 2, 4 and 6 of the Johnson patent, a determination of the validity of claims other than 13 and 14 will not herein be attempted.

Claims 13 and 14 of this patent are as follows:

> "13. An adhesive which comprises the reaction products of soya bean flour, an aqueous alkaline medium, and carbon bisulphide as a waterproofing agent."
>
> "14. An adhesive which comprises the reaction products of soya bean flour, an aqueous alkaline medium, and carbon bisulphide, the carbon bisulphide and the soya bean flour being in the proportions of about five parts and about thirty parts respectively." [95]

The ingredients used in the defendants' glues will be re-stated. As described in the stipulation they are:

"1. Soya bean flour purchased from the defendant Chas. H. Lilly Co.

2. Hydrated lime.

3. Trisodium phosphate.

4. Caustic soda as purchased in the market.

5. That up to about February 20, 1929, carbon bisulphide was used."

The defendant Linquist testified:

"Q. At the present time how many soya bean glues is the Kaseno Products Company putting out?

A. We are making two, commercially.

Q. Do you have a special name for those glues?

A. Yes; one is No. 26 glue, and one is No. 3355.

Q. I will ask you whether or not your No. 26 glue is made up of a mixture of the following ingredients: water, soya bean meal, blood, copper sulphate, caustic soda, hydrated lime, silicate of soda and viscose?

A. It is.

Q. I will ask you whether or not your glue No. 3355 is made up of the following ingredients: water, soya bean meal, caustic soda, hydrated lime, silicate of soda, viscose and hexamethylenetetramin?

A. It is.

Q. Is there hexamethylenetetramin in your No. 26 glue? I omitted that.

A. Yes."

By the foregoing, infringement is shown prior to 1929 if claims 13 and 14 are valid. Separate consideration is necessary after that date on account of the defendants' use of viscose and not of carbon bisulphide. Injunctive relief should not be denied merely because a defendant no longer infringes. Du Bois vs. Kirk, 158 U. S. 58-65, 66; Continental Paper Bag Company vs. Eastern Paper Bag Company, 210 U. S. 405, affirming 150 Fed. 741; W. A. Schleit Mfg. [96] Co. vs. Syracuse Radiator Co., 288 Fed. 52, affirming 278 Fed. 305, 307; Western Electric Co. vs. Capital Telephone & Telegraph Co., et al., 86 Fed. 769-778; Star Ball Player Co. vs. Baseball Display Co., 8 Fed. (2d) 46-49.

The evidence clearly shows that the addition of carbon bisulphide increases the water resistance of the glues in question. The defendants' first contention—that this patent is invalid—is well stated in the words of their brief:

"THE CARBON BISULPHIDE PATENT IS INVALID FOR LACK OF INVENTION.

It is the defendants' contention that by adding carbon bisulphide to soya bean glue which has been treated with caustic soda, the fibrous matter or cellulosic material in the flour is converted into viscose, and that it is this viscose

reaction which gives the resultant glue greater water resistance. The making of viscose by treating cellulosic material with caustic soda and carbon bisulphide was well-known long prior to the time the Carbon Bisulphide Patent was applied for. The defendants contend that there was no invention in converting the fibrous matter contained in soya bean flour into viscose by this well known method, and thereby making the glue more waterproof.

Plaintiff contends that the function of carbon bisulphide is not to make viscose in the glue mix, but is to make the glue more water resistant by acting upon the protein.

We will take up first our contention that the action of carbon bisulphide is a viscose reaction, and second, that this viscose reaction was well known.

(a) Carbon Bisulphide Does Not Waterproof Protein, But Acts on the Fibrous Matter, Converting the Same Into Viscose.

Plaintiff was compelled to adopt the theory that carbon bisulphide acts upon the protein. Such was the representation made to the Patent Examiner in order to secure a patent. Because of the prior art, containing patents on adhesive compositions made by treating starch and carbohydrates, including cellulose, with carbon bisulphide, the applicants, in order to obtain

> any patent at all, were driven to take the position that they were attacking protein. That they unqualifiedly took this position is shown by reference to the Carbon Bisulphide file wrapper, Defendants' exhibit 'A-23.' "

Plaintiff admits that the viscose reaction was old; admits that the representation to the patent office was that [97] the increased water resistance of plaintiff's carbon bisulphide glue was due to the chemical action on the vegetable protein matter of the soya bean flour, but denies the viscose reaction in the glue of its patent. The decided preponderance of the evidence is that there is no viscose reaction in plaintiff's carbon bisulphide glue. The most conclusive proof of this probably is that the amount of caustic soda used in the glue of the patent is many times less than the amount necessary for the viscose reaction. There is no preponderance of the evidence that the water resistance of this glue is increased because of any effect of the caustic soda upon the hemi-celluloses as claimed by the defendants rather than upon the protein as taught by the carbon bisulphide patent. Even though it be assumed that a much lower concentration of caustic soda is necessary to dissolve hemi-celluloses than cellulose, yet there is no preponderance of the evidence that viscose can be made from hemi-cellulose.

In addition to the United States patent No. 1,245,975 to Satow already considered, and held to teach a plastic, the defendants contend that the carbon bisulphide patent was anticipated by the follow-

ing patents: United States patent No. 1,078,692 to Perkins, United States patent No. 1,412,020 to Stern and three patents to Chavassieu, one British No. 26,155 and two United States patents numbered 984,539 and 950,435, respectively.

The Perkins patent teaches a glue base neither of soya bean flour nor of any vegetable seed flour of considerable protein content, but of starch or carbohydrates, as is clearly shown by the following from the specifications of that patent: [98]

> "The present invention in one form may be said to consist in suitably modifying the last step or operation of the processes described in said patents by prolonging the same with or without an increase in temperature, whereby the caustic soda alone acts as a substitute for the caustic soda and peroxide of soda, or as a substitute for the acid or other suitable *starch* degenerating agents, to produce in the glue-dissolving kettle itself, a series of reactions by which the viscosity, cohesiveness and adhesiveness of the *carbohydrates,* when finally dissolved shall be more or less affected simultaneously with, or in substantially the same operation as, the treatment which puts the *carbohydrate* into solution.
>
> The success of this treatment depends to a considerable extent on the character of the *carbohydrates* used. Various *starches and flours* may be used, but in each case the treatment should be slightly modified in order to

adjust it to the particular characteristics of the raw material used. Even the same kinds of *starch* manufactured from plants of a different growth or found in a different locality, or even *starches* from the same plant separated by slightly different processes of manufacture, are found to differ sufficiently to require modification in the treatment. The *starches or flours obtained from corn, wheat, potato, sago palm and the cassava* plants have all been tried with success, but for most purposes the most convenient and economical *starches* have proven to be those derived from the cassava plant and sold on the market as *cassava flour* of the grades M-4, M-5 or 'Royal.' Examples of the process as carried out with *starches* known as cassava M-4 and cassava M-5 and Royal, will first be given and then a more general specification will be given, by which anyone skilled in the art may apply the process to *other flours and starches* and produce usable results, and by slight adjustment of this general treatment it may be readily modified to adapt itself more particularly to the *starch* in question, and produce increasingly satisfactory results, as will be understood by those skilled in the art.

* * * * * * * * * *

It will be obvious in all these examples, that the treatment has been such as to permit a portion of the caustic soda used, to act either alone or together with heat, upon the undissolved

starch granule, for a period depending on the strength of the caustic and the temperature used.

* * * * * * * * * *

It is therefore clear that the invention in its broader aspects is not limited to the particular *carbohydrates,* temperatures or percentages stated, nor to the use of caustic soda alone, as other *carbohydrates* such as certain grades of *celluloses or hemi-celluloses,* and other temperatures and percentages, and other caustics such as caustic potash and other solvents of cellulose, such as for instance sodium xanthate, sodium silicate, zinc chlorid and basic lead acetate, will readily suggest themselves to those skilled [99] in the art to meet the peculiar exigencies of each case." (Italics the Court's.)

The patent to Stern—United States patent No. 1,412,020, is also for a glue with a starch base.

None of the patents to Chavassieu, the British patent number 26,155, nor either of the two United States patents numbered 950,435 and 984,539—the latter relating to improvements in the processes of his earlier United States patent—is for a glue. In the specifications of the earlier of the United States patents it is stated:

"The proteo-cellulosic-zanthate solutions can be applied to different industrial uses such as the manufacture of thread, silk, hair filaments, pellicles, molded and compressed tissues, etc. For instance, silky threads or filaments can be

> obtained by passing the substance through a draw plate and coagulating and treating the threads obtained with dilute sulfuric acid."

None of the five foregoing patents anticipate the patent in suit.

The defendants have further contended that they have in no event infringed this patent since 1929, having in that year stopped the use of carbon bisulphide and begun the use of viscose in the making of their glues. Defendants, in their brief, state the issue in this particular as follows:

> "Since claims 13 and 14, which cover flour, are limited to carbon bisulphide, it follows that neither of these claims is infringed by the glues the defendant corporation is making, inasmuch as carbon bisulphide is not an ingredient of said glues. If the use of soya bean flour and viscose does infringe the Carbon Bisulphide patent, then that patent is invalid since the use of soya bean flour and viscose is taught by the Satow patent."

Viscose, as described by Ingo W. D. Hackh, in his Chemical Dictionary published by P. Blakiston's Son & Co., Inc., at page 766, is: [100]

> "An extremely viscous or glutinous, syrup-like liquid obtained by treating cellulose with potassium hydroxide and carbon disulphide, from which acids precipitate cellulose. By pressing this liquid through fine openings into dilute acids the cellulose separates into fine, silky threads—viscose silk, rayon."

From the evidence in this case it also appears that viscose is made by the use of caustic soda instead of potassium hydroxide. There is no difference between carbon bisulphide and carbon disulfide.

The specifications of the carbon bisulphide patent state:

> "In order to improve the working properties, e. g., the spreading and flow of the glue produced as aforesaid as well as the water resisting properties, we have found it desirable to add other substances of which the following are examples:
>
> Carbon bisulphide, calcium polysulphide. Equivalents would be other sulphur compounds of like properties or constitution, such as, for example, sodium thiocarbonate and potassium xanthate, sodium silicate, or other soluble silicates."

Viscose is, within this teaching, a sulphur compound. The evidence in the case, including the conduct of defendants in substituting viscose for carbon bisulphide, shows that for the uses in question viscose is a sulphur compound with properties like those of carbon bisulphide. It is not necessary to determine whether "cellulose esters," as the expression is used in the patent to Satow, includes viscose or not, for Satow's patent teaches the making of a plastic and not a glue.

Claims 13 and 14 are valid and have been infringed. Infringement of the three patents in suit

is not avoided by adding to the described materials of the patents other substances not shown to radically change the composition of the patent. Tilghman vs. Proctor, et al., 102 U. S. 707, 731; Hoskins Mfg. Co. vs. General Electric Co., 212 Fed. 422, 428; Schram Glass Mfg. Co. vs. Homer Brooke Glass Co., [101] 263 Fed. 903.

CONTRIBUTORY INFRINGEMENT.

The defendants Chas. H. Lilly Co. and Wilmot H. Lilly, are sued for contributory infringement. It is alleged that these defendants sold to the Kaseno Products Co., soya bean material adapted and intended to be employed as a substantial part of the infringing adhesive of the defendant Kaseno Products Co., knowing that said material was to be used in the manufacture of the infringing adhesive; that the defendant, Wilmot H. Lilly, is the President of the Chas. H. Lilly Co., and directs and controls all of its acts and is directly and personally in charge of conducting the infringing acts of said company of which complaint is made. The evidence has established that the defendant, Wilmot H. Lilly, as alleged, directs and controls the acts of his company.

It has been stipulated that these two defendants on and before the bringing of the present suits:

> "Sold and delivered and is now selling and delivering to the Kaseno Products Co., a co-defendant herein, soya bean seed cake ground to glue specifications, that is eighty mesh or

finer, for use in the manufacture of the adhesives or glues of said company."

Two letters of the defendant, Chas. H. Lilly Co., were introduced in evidence. These letters are as follows:

"October 17, 1928.

The Arabol Manufacturing Co.,
110 East 42nd St.,
New York, N. Y.

Gentlemen:

We are manufacturers of Soya Bean Flour which is being used extensively on this Coast as a base in waterproof glue. Glue made from this material has almost entirely replaced casein glue in the manufacture of Ply wood or veneer. Formerly the mills in this territory used practically nothing but casein glue in the manufacture of these panels, but have now switched to a Soya Bean glue with which [102] they secure as good or better adhesive at a far lower cost.

We understand you people are the largest manufacturers in the world of various adhesives and the thought occurred to us that if you are not now using Soya Bean Flour in any of your products you might be interested in doing a little experimenting along this line. If you are already using this material we would be only too glad to submit samples of our product and quote you prices.

Our material is a true Soya Bean flour in every sense of the word and is not to be confused with various grades of fine ground Soya Bean meal which are sometimes offered. Our material is specially processed to remove a very large percentage of the fiber and is bolted through a flour mill process through a fineness of 100, 109, or 126 mesh. We have sold large quantities to glue manufacturers on the coast here and have shipped some to the glue manufacturers in the furniture district around Grand Rapids, Michigan, and also to various glue manufacturers on the East Coast, and in every case our product has met with their approval as to quality and uniformity, and we know that our prices are in line, and have been getting repeat business from them. We believe that if you are not now using Soya Bean Flour in any of your products it would certainly be to your interest to investigate its use, and to that end we are glad to furnish you with what samples and information we have on the subject.

Awaiting your reply and trusting that we may be of some service to you, we are

Yours very truly,

LILLY'S—Seattle.

SEV-PE By S. E. Victor."

"Nov. 1, 1928.

The Arabol Manufacturing Co.,
110 East 42nd St.,
New York, N. Y.

Via: Air Mail.

Attention, Mr. A. M. Baumann:
Gentlemen:

We thank you for your letter of Oct. 23d and are glad to know that you are interested in Soya Bean Flour. We are sending you a 25 lb. bag of this material as a sample. We are sending you only the one grade which has been processed through 100 mesh. [103] This is the grade that is in the greatest demand in this section of the country, although we have made some flour as fine as 109 and 126 mesh. The various glue manufacturers seem to prefer the finer mesh, however they have been buying the 100 mesh inasmuch as the cost is less.

We are pleased to quote you a price of $65.00 per ton, F.o.b. Seattle, draft terms, in car lots, on this grade; or $70.00 per ton F.o.b. Seattle, draft terms, in less than car lots.

This is a comparatively new commodity on the market and considering the short length of time it has been used it has gained the approval of glue manufacturers in this locality. We have been told indirectly that Laucks & Company of Seattle handle hundreds of tons of this material each month, and it is said that they are using it both for glue and for a wall

texture. Several other manufacturers on this Coast and on the East Coast are buying the material in carload lots, and one of these manufacturers who turns out nothing but glue is now using four to five cars monthly. We see great possibilities for the use of Soya Bean Flour in your territory and are pleased that you are taking an interest in it and will undoubtedly do some experimenting. We shall be pleased to hear from you as to what you think of the material and how your experiments work out.

Thanking you for the opportunity of quoting and submitting samples, and trusting that we may be of further service to you, we are

Yours very truly,

THE CHAS. H. LILLY CO.

SEV-PE By S. E. Victor."

The foregoing is sufficient to show contributory infringement on the part of these defendants and to take the case out of the rule that one who sells to an infringer an article of commerce having ordinary uses unconnected with the product of the patent, without intent to contribute to the manufacture of such product, does not infringe. The stipulation and letters show that it was the intent of these defendants that the article sold by them should be used in the manufacture by their co-defendants of the product of plaintiff's inventions. Thomson-Houston Electric Co. vs. Ohio Brass Co., 80 Fed.

712, 721-723; Electro Bleaching Gas Co. vs. Paradon Engineering Co., 12 Fed. (2d) 511, 513; Trico [104] Products Corporation vs. Apco-Moseberg Corporation, 45 Fed. (2d) 594, 599; Walker on Patents, 5th Edition, Sec. 407. These defendants have also infringed the claims of the three patents which have been held valid and infringed by the other defendants.

The decree will be as herein indicated, the findings, conclusions and decree to be settled upon notice and the parties to be heard upon the question of costs at the time of settling the decree. Revised Statutes, Sec. 4922 (Title 35, U. S. C. A., Sec. 71).

The Clerk is directed to notify the attorneys for the parties of this decision.

[Endorsed]: Filed Jun. 15, 1932. Ed. M. Lakin, Clerk. [105]

In the United States District Court for the Western District of Washington, Northern Division.

In Equity

No. 659

I. F. LAUCKS, INC., a corporation,

Defendants.

vs.

KASENO PRODUCTS CO., a corporation, GEORGE F. LINQUIST, CHAS. H. LILLY CO., a corporation, and WILMOT H. LILLY,

Defendants,

DECREE.

This cause came on regularly to be heard at this term of Court and was submitted on briefs by counsel for the respective parties, and the Court thereafter filed its memorandum decision or opinion; and thereupon, upon consideration thereof, IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. That the Court hereby adopts its memorandum opinion or decision filed June 15, 1932, as its findings of fact and conclusions of law herein.

2. That United States Letters Patent to Irving F. Laucks and Glenn Davidson No. 1,689,732, granted October 30, 1928, for "Vegetable Glue and Method of Making Same" as to claims 2, 4, 6, and 8 are good and valid in law, the Court making no

adjudication as to 1, 3, 5, 7,—claims 9 and 10 not being in suit.

3. That United States Letters Patent No. 1,691,661 granted to Irving F. Laucks and Glenn Davidson, November 13, 1928, for "Vegetable Glue and Method of Making Same" as to claims 13 and 14 thereof, are good and valid in law, the Court making no adjudication as to the remaining claims thereof.

4. That the respective applicants for each of said two patents named above were the true, first, original, and joint inventors of the improvements described and claimed respectively [107] in said two named Letters Patent.

5. That I. F. Laucks, Inc., a corporation, organized and existing under and by virtue of the laws of the State of Washington, is the lawful owner of said aforesaid named two Letters Patent.

6. That the defendants, Kaseno Products Co., a corporation organized and existing under and by virtue of the laws of the State of Washington, and/or George F. Linquist have and/or has infringed each of said two named Letters Patents as to the aforesaid mentioned claims of said Letters Patents, to-wit: Claims 2, 4, 6, and 8 of the United States Letters Patent to Irving F. Laucks and Glenn Davidson No. 1,689,732, granted October 30, 1928, for "Vegetable Glue and Method of Making Same" and Claims 13 and 14 of United States Letters Patent to Irving F. Laucks and Glenn David-

son, No. 1,691,661, granted November 13, 1928, for "Vegetable Glue and Method of Making Same," said claims reading respectively:

A. Letters Patent No. 1,689,732.

2. A vegetable glue composition, comprising the reaction products of soya bean flour and an alkali metal hydroxide as such in an aqueous medium.

4. A vegetable glue composition, comprising the reaction products of soya bean flour, an alkali metal hydroxide as such in an aqueous medium, and calcium hydrate.

6. A vegetable glue composition, comprising the reaction products of soya bean flour, caustic soda as such, calcium hydrate, and an alkali metal silicate, the proportions of the soya bean flour, the caustic soda and the calcium hydrate being about 30 parts of the soya bean flour, about 2-4½ parts of caustic soda in aqueous solution, and about 3-6 parts of calcium hydrate.

8. The process of making a vegetable glue, which comprises treating soya bean flour with caustic soda as such in an aqueous medium, the proportions of such flour and the caustic soda being about 30 parts of the flour and about 2-4½ parts of caustic soda in aqueous solution. [108]

B. Letters Patent No. 1,691,661.

13. An adhesive which comprises the reaction products of soya bean flour, an aqueous akaline medium, and carbon bisulphide as a water-proofing agent.

14. An adhesive which comprises the reaction products of soya bean flour, an aqueous alkaline medium, and carbon bisulphide, the carbon bisulphide and the soya bean flour being in the proportions of about five parts and about thirty parts respectively.

7. That defendants Chas. H. Lilly Co., a corporation, organized and existing under and by virtue of the laws of the State of Delaware, and/or Wilmot H. Lilly have and/or has contributorially infringed each of said two named Letters Patents as to the aforesaid mentioned Claims of said Letters Patents, to-wit: Claims 2, 4, 6, and 8 of the United States Letters Patent to Irving F. Laucks and Glenn Davidson No. 1,689,732, granted October 30, 1928, for "Vegetable Glue and Method of Making Same" and Claims 13 and 14 of United States Letters Patent to Irving F. Laucks and Glenn Davidson, No. 1,691,661, granted November 13, 1928, for "Vegetable Glue and Method of Making Same," said claims being set forth in paragraph 6 hereof.

8. That a writ of perpetual injunction issue out of this Court and under the seal of this Court directed to said defendants, Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, and each and every one of them, perpetually enjoining and restraining the said defendants, their respective officers, directors, attorneys, agents, dealers, servants, representatives, workmen, clerks, employees, sales-

men, subsidiaries, and privies, and all others acting by or under their direction or authority and those in active concert or participating with them under the pains and penalties which may fall upon them and each or any of them in case of disobedience from directly or indirectly making or [109] causing to be made, selling or causing to be sold, using or causing to be used, contributing to the making or causing to be made, contributing to the selling or causing to be sold, contributing to the using or causing to be used, and/or threatening to manufacture and/or use and/or sell adhesive, glue or glues embodying or containing the inventions patented in and by said Letters Patents and/or encouraging or abetting such acts by others, and/or conspiring to infringe directly or indirectly in any wise the inventions patented in and by said Letters Patents, to-wit:

A. United States Letters Patent No. 1,689,732, granted October 30, 1928, to Irving F. Laucks and Glenn Davidson for "Vegetable Glue and Method of Making Same" as respects Claims 2, 4, 6, and 8 thereof.

B. United States Letters Patent No. 1,691,661, granted November 13, 1928, to Irving F. Laucks and Glenn Davidson for "Vegetable Glue and Method of Making Same" as respects Claims 13 and 14 thereof.

9. That the plaintiff do recover from the said defendants, namely Kaseno Products Co., a corpo-

ration, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, the profits, gains and benefits which the said defendants have respectively, jointly or severally derived, received or enjoyed by reason of their said infringement of said claims of said Letters Patents, or which may have accrued to them, jointly or severally by reason of the said infringement of said claims of said patents; and that the plaintiff do recover from the said defendants, either jointly or severally or any of them, as may upon a final accounting hereafter be determined, any and all damages which plaintiff has sustained or which may be sustained hereafter, by reason of the said infringing acts of said defen- [110] dants. Evidence relative to both the profits and/or damages and evidence relative to the joint and/or several liability of said defendants for their infringing acts will be received by the hereinafter named Master of this Court.

10. That this cause be, and the same is hereby referred to W. B. Stratton, as Master of this Court, who is hereby appointed by reason of his special ability and fitness, to ascertain, fix and state the amounts of: (a) gains and benefits derived, received or enjoyed by the said defendants, severally and/or jointly, or any of them by reason of the said infringing acts of each and all of said defendants, direct or contributory, and (b) the damages sustained by and/or accruing to the plaintiff, by reason of the said infringing acts of each and all

of said defendants, direct or contributory, and that the said defendants and each of them, their officers, directors, attorneys, agents, dealers, servants, representatives, workmen, clerks, employees, salesmen, subsidiaries, and privies are hereby directed and required to attend before the said Master, from time to time, as the said Master may require, and to produce before him such books, papers, vouchers, documents, and/or other evidentiary matters or things and to submit to such oral examination as the Master may require, and the Master is directed to report thereon with all convenient speed.

11. The plaintiff recover from the said defendants, Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, either severally or jointly, or any of them, its costs in this Court in the amount of $797.56, and that the plaintiff have execution against each of said defendants for said costs.

Dated at Tacoma, Washington, this 11th day of July, 1932.

EDWARD E. CUSHMAN,
United States District Judge.

[Endorsed]: Filed Jul. 11, 1932. Ed. M. Lakin, Clerk. [111]

[Title of Court and Couse.]

REQUEST FOR FINDINGS.

The defendant, The Chas. H. Lilly Co., requests the court to find as follows:

I.

That the defendant, The Chas. H. Lilly Co., has not infringed any one of the claims of the patents in suit which the court holds to be good and valid in law.

II.

That The Chas. H. Lilly Co. has not contributorially infringed any one of the claims of the patents in suit which the court holds to be good and valid in law. And, The Chas. H. Lilly Co., requests the court to make the following conclusions of law:

1. That The Chas. H. Lilly Co. is entitled to a judgment and/or decree.

2. That the complainant take nothing by this action as against The Chas. H. Lilly Co., and that as to it the action be dismissed with costs.

J. C. ALLEN,
Attorney for Defendant, The
Chas. H. Lilly Co.

The foregoing requests were presented to the court before the court by decree made its findings, were considered and each refused and exceptions to each allowed.

EDWARD E. CUSHMAN,
Judge.

[Endorsed]: Filed Jul. 11, 1932. Ed M. Lakin, Clerk. [112]

[Title of Court and Couse.]

REQUEST FOR FINDINGS.

The defendant, Wilmot H. Lilly, requests the court to find as follows:

I.

That the defendant, Wilmot H. Lilly, has not infringed any one of the claims of the patents in suit which the court holds to be good and valid in law.

II.

That Wilmot H. Lilly has not contributorially infringed any one of the claims of the patents in suit which the court holds to be good and valid in law. And, Wilmot H. Lilly requests the court to make the following conclusions of law:

1. That Wilmot H. Lilly is entitled to a judgment and/or decree.

2. That the complainant take nothing by this action as against Wilmot H. Lilly, and that as to him the action be dismissed with costs.

JAY C. ALLEN,
Attorney for Defendant,
Wilmot H. Lilly.

The foregoing requests were made to the Court before the Court by decree made its findings, were considered and each denied. Exception as to refusal as to each allowed.

EDWARD E. CUSHMAN,
Judge.

[Endorsed]: Filed Jul. 11, 1932. Ed. M. Lakin, Clerk. [113]

[Title of Court and Cause.]

EXCEPTIONS.

The defendant Chas. H. Lilly Co., and Wilmot H. Lilly each for himself takes and preserves the following exceptions herein:

1. They except to the failure of the Court to comply with the Equity Rule 70½, and make findings of fact and conclusions of law, and also except to the Court entering a decree herein without making findings of fact and conclusions of law, as provided in Equity Rule 70½.

2. Considering the Court's memorandum opinion and/or decision filed June 15, 1932, as its findings of fact and conclusions of law, as stated in the decree, these defendants do severally, each for himself, except to such findings of fact and conclusions of law in this:

(a) To the finding of the Court that the stipulation referred to and recited by the Court on page 29 of its said memorandum opinion and/or decision at line 20 and the two letters referred to on said page 29 and on page 30, are sufficient to show contributory infringement on the part of these defendants, upon the ground and for the reasons that said finding is contrary to the [114] evidence and contrary to the law and is not supported by either the evidence or the law.

(b) Except to the finding of the Court that said stipulation referred to on page 29 of said memorandum opinion and/or decision and the two letters referred to, are sufficient to take the case out of the rule, that one who sells to an infringer an article of commerce, having ordinary uses unconnected with the product of the patent without intent to contribute to the manufacturer of such product does not infringe, upon the ground and for the reason that the same is contrary to law and the facts.

(c) Except to the finding of the Court that the stipulation and letters show that it was the intent of these defendants that the article sold by them should be used in the manufacture by their co-defendants of the product of plaintiff's inventions, upon the ground and for the reason that the same is contrary to law and to the evidence.

(d) Except to the finding and/or conclusion of the court that these defendants have infringed claims 2, 4, 6 and 8 in the patent to Laucks and Davidson, No. 1,689,732, upon the ground and for

the reason that the same is contrary to the evidence and contrary to the law; they each also except to said finding and conclusion that these defendants have infringed said claims 2, 4, 6 and 8 because said finding and/or conclusion as stated by the court in its memorandum decision, which it has adopted as its findings of fact herein, does not justify the finding of infringement by these defendants of said claims, either contributorily or otherwise, and because said finding and/or conclusion is not supported by the facts found. This exception is made as to each of said claims 2, 4, 6, and 8, separately and conjunctively.

(e) Except to the finding of the court that these defendants have infringed claims 13 and 14, of patent No. 1,691,661 granted to Laucks and Davidson, upon the ground and for the reason [115] that the same is contrary to the evidence and contrary to the law: they each also except to said finding and conclusion that these defendants have infringed said claims 13 and 14 because said finding and/or conclusion as stated by the court in its memorandum decision, which it has adopted as its finding of fact herein, does not justify the finding of infringement by these defendants of said claims, either contributorially or otherwise, and because said finding and/or conclusion is not supported by the facts found. This exception is made as to each of said claims 13 and 14, separately and not conjunctively.

3. These defendants jointly and severally and each for himself except to paragraph 2 of the decree

and to the whole thereof. This exception going as to each of said claims, separately and not conjunctively.

4. These defendants except to paragraph 3 of the decree and to the whole thereof. This exception going to each of said claims and not to them conjunctively.

5. Except to the finding of the court as to the stipulation wherein it is stipulated "that the defendant, Kaseno Products Company is engaged in the manufacture of adhesive or glue and is now using in the manufacture of its adhesive or glue, among other things, the following ingredients.

(1) Soya bean flour, purchased from the defendant Chas. H. Lilly Company * * *, in so far as it finds that these excepting defendants made any such stipulation, upon the ground and for the reason that there is not evidence sustaining such finding as to these excepting defendants.

6. Except to the finding that the said stipulation, above referred to, and the testimony of the defendant Linquist show infringement of claims 2, 4, 6 and 8 of the "costic soda" patent, being patent No. 1,689,732, upon the ground and for the reason that there is no evidence to support the same. [116]

7. Except to the refusal of the court to sustain defendants' contention or claim that said patent is anticipated by the Johnson Patent, which was in suit in cause No. 621, consolidated with this case for trial.

8. Except to the finding of the court overruling the defendants' contention that Johnson taught the use of Caustic soda by the specification in his patent, being the patent in suit No. 621, consolidated with this case for trial.

9. Except to the finding of the court refusing to sustain the contention of these defendants that the lime and sodium fluoride of the Johnson Patent forming caustic soda, by double decomposition it anticipated the patent in suit.

10. In finding that the two publications of Dr. Satow claimed by defendants to anticipate the Johnson Patent in suit in cause No. 621, which was consolidated with this case for trial, did not anticipate the caustic soda patent in suit.

11. In finding that claims 2, 4, 6, and 8 of the caustic soda patent, being patent No. 1,689,732 are valid.

12. In finding that said claims 2, 4, 6, and 8 of said caustic soda patent have been infringed.

13. In finding that claims 13 and 14 of the carbon bisulphide patent, (being patent No. 1,691,661), or either of them were valid claims.

14. In finding that claims 13 of said carbon bisulphide patent has been infringed.

15. In finding that claim 14 of said carbon bisulphide patent has been infringed.

16. In refusing to sustain defendants' contention that said carbon bisulphide patent is invalid.

17. These defendants except to the court's finding that preponderance of the evidence is that there is no viscose reaction in plaintiff's carbon bisulphide glue, and/or that viscose can be [117] made from hemi-celluloses.

18. These defendants except to the finding of the court that this patent was not anticipated by the Satow patent No. 1,245,975, or by patent No. 1,078,-692 to Perkins, No. 1,412,020 to Stern, or by the three patents to Chavassieu mentioned.

19. In holding that the Satow patent No. 1,245,-975 is not a glue patent but simply teaches "a plastic."

20. To the finding of the court that there is no difference between carbon bisulphide and carbon disulfide.

21. Except to paragraph 6 of the decree, upon the ground and for the reason that the same is not supported by the evidence in the case.

22. Except to paragraph 7 of the decree, upon the ground and for the reason that the same is not supported by the evidence, and is directly contrary to the evidence and further because the same is not supported by the finding of the court.

23. Except to paragraph 8 of the decree wherein the court directs the issuance of perpetual injunction against these defendants, upon the ground and for the reason that the same is not supported in the evidence, but is contrary thereto, and is contrary to

the facts as found by the court in so far as the same applies to these excepting defendants.

24. These defendants except to paragraph 9 of the decree wherein the court decrees that the plaintiff is entitled to recover from these defendants and their codefendants have respectively, jointly or severally derived, received or enjoyed, etc., upon the ground and for the reason that the court should have specifically limited the recovery of the damages as against these defendants to the acts of these defendants; also upon the ground and for the reason that the court in said decree gives to plaintiff double damages in that he gives plaintiff damages and profits, gains and benefits, and also for damages. We contend that plaintiff is not entitled to both profits and damages. [118]

25. Defendant excepts to paragraph 11 of the decree wherein the court awards costs to the plaintiff as against these excepting defendants, upon the ground and for the reason that under the law the plaintiff having filed disclaimers after suit brought was not entitled to costs in any event. This exception is intended as an exception by each of the defendants to the allowance of costs against it and/or him.

26. The defendant, Wilmot H. Lilly, separately excepts to the finding that he as an individual, contributorially or otherwise infringed any of the claims of any of the patents in suit, upon the ground and for the reason that such finding is contrary to

the evidence, that there was no evidence showing that he personally or individually infringed any claim of any of the patents.

27. The defendant Wilmot H. Lilly separately and for himself excepts to the conclusion of law that he as an individual contributorially or otherwise infringed any of the claims of any of the patents in suit, upon the ground and for the reason that the evidence does not justify any such conclusion of law, and that the finding of fact does not support such a conclusion of law.

28. The defendant Chas. H. Lilly Co., expects to the refusal of the court to make the first requested finding of fact requested by said defendant.

29. The Chas. H. Lilly Co., excepts to the refusal of the court to make the second finding of fact as requested by this defendant.

30. The Chas. H. Lilly Co. except to the refusal of the court to make the first conclusion of law as requested by this defendant.

31. The Chas. H. Lilly Co. except to the refusal of the court to make the second conclusion of law as requested by this defendant.

32. The defendant Wilmot H. Lilly excepts to the refusal of the court to make the first requested finding of fact requested [119] by this defendant.

33. The defendant Wilmot H. Lilly, excepts to the refusal of the court to make the second finding of fact as requested by this defendant.

34. The defendant Wilmot H. Lilly excepts to the refusal of the court to make the first conclusion of law as requested by this defendant.

35. The defendant Wilmot H. Lilly, excepts to the refusal of the court to make the second conclusion of law as requested by this defendant.

JAY C. ALLEN,
Attorney for Chas. H. Lilly Co.,
and Wilmot H. Lilly.

The foregoing exceptions were presented to the Court in open court at the time the court signed its decree, were each considered and each allowed to each of the excepting defendants.

EDWARD E. CUSHMAN,
Judge.

[Endorsed]: Filed Jul. 11, 1932. E. M. Lakin, Clerk. [120]

[Title of Court and Cause.]

ASSIGNMENT OF ERRORS.

Now on this 1st day of August, 1932, came the defendants, the Chas. H. Lilly Co., and Wilmot H. Lilly, by their solicitors, Jay C. Allen, and Weldon G. Bettens, and say: That the Decree entered in the above cause on the 11th day of July, 1932, is erroneous and unjust to these defendants;

1. Because the Court erred in admitting in evidence Exhibit 59, being a letter from the Chas. H.

Lilly Co., to the Arabol Manufacturing Company, dated October 17, 1928, and erred in overruling these defendants' objections to the introduction thereof, upon the ground that the same was immaterial.

2. Because the Court erred in admitting in evidence Exhibit No. 60, being a letter from the Chas. H. Lilly Co. to the Arabol Manufacturing Company, under date of November 1, 1928, and because the Court erred in overruling these defendants' objections thereto, upon the ground of immateriality.

3. Because the court erred in overruling the motion of the defendant Wilmot H. Lilly to dismiss the action as to him, which said motion was made at the close of complainant's case in chief, and which was as follows:

Mr. Allen: If your Honor please, on the evidence as introduced, I desire on behalf of Mr. Wilmot H. Lilly to move for a dismissal. [126] There is not one single word that has been uttered here in evidence about Wilmot H. Lilly, except that he is President of the Chas. H. Lilly Co., and because there is no evidence showing any contributory infringement on his part.

4. Because the Court erred in overruling the motion made by the defendant Chas. H. Lilly Co. for a dismissal of the action as to them, made at the close of the complainant's evidence in chief, which said motion was in the words and figures following, to-wit:

Mr. Allen: I desire now at this time to make a motion on behalf of the Chas. H. Lilly Co. for a dismissal, upon the ground and for the reason that there is not sufficient evidence here against the Chas. H. Lilly Co. to show that it was a contributor to any infringement, if any infringement was had; upon the ground that there is not a single solitary word of evidence that goes to show that they sold any soya bean flour or any material with knowledge that it was to be used in the infringement of any patent * * * .

5. Because the court erred in refusing to make the first finding of fact requested by the defendant Wilmot H. Lilly, that the defendant Wilmot H. Lilly has not infringed any one of the claims of the patents in suit, which the court holds to be good and valid in law.

6. Because the court erred in refusing to make the second finding of fact requested by the defendant Wilmot H. Lilly, that the defendant Wilmot H. Lilly has not contributorially infringed any one of the patents in suit, which the court holds to be good and valid in law.

7. Because the Court erred in refusing to conclude as a matter of law, as requested by Wilmot H. Lilly, that the complainant take nothing by this action as against Wilmot H. Lilly and that as to him the action be dismissed with costs. [127]

8. Because the court erred in refusing to find as a fact, as requested by The Chas. H. Lilly Co.,

that the defendants, The Chas. H. Lilly Co., has not infringed any one of the claims of the patents in suit, which the court holds to be good and valid in law.

9. Because the court erred in refusing to find as a fact as requested by The Chas. H. Lilly Co., that the Chas. H. Lilly Co., has not contributorially infringed any one of the claims of the patents in suit, which the court holds to be good and valid in law.

10. Because the Court erred in refusing to conclude as a matter of law, as requested by the Chas. H. Lilly Co., that the complainant take nothing by this action as against the Chas. H. Lilly Co., and that as to it the action be dismissed with costs.

11. Because the Court erred in refusing to comply with Equity Rule No. 70½ and make findings of fact and conclusions of law, and in entering a decree herein without making findings of fact and conclusions of law as provided in Equity Rule No. 70½.

12. Because the court erred in its finding and/or conclusion contained in its memorandum decision, which the Court by its decree attempted to adopt as its findings of fact and conclusions of law, that the stipulation made by these defendants, that these two defendants on and before the bringing of the present suits,

> "sold and delivered and is now selling and delivering to the Kaseno Products Co., a co-

defendant herein, soya bean seed cake ground to glue specifications, that is, eighty mesh or finer, for use in the manufacture of the adhesives or glues of said company",

and the two letters of the defendant, the Chas. H. Lilly Co., as follows: [128]

"October 17, 1928.

The Arabol Manufacturing Co.,
110 East 42nd St.,
New York, N. Y.

Gentlemen:

We are manufacturers of Soya Bean Flour which is being used extensively on this Coast as a base in waterproof glue. Glue made from this material has almost entirely replaced casein glue in the manufacture of Ply wood or veneer. Formerly the mills in this territory used practically nothing but casein glue in the manufacture of these panels but have now switched to a Soya Bean glue with which they secure as good or better adhesive at a far lower cost.

We understand you people are the largest manufacturers in the world of various adhesives and the thought occurred to us that if you are not now using Soya Bean flour in any of your products you might be interested in doing a little experimenting along this line. If you are already using this material we would be only too glad to submit samples of our product and quote you prices.

Our material is a true Soya Bean flour in every sense of the Word and is not to be confused with various grades of fine ground Soya Bean meal which are sometimes offered. Our material is specially processed to remove a very large percentage of the fiber and is bolted through a flour mill process through a fineness of 100, 109, or 126 mesh. We have sold large quantities to glue manufacturers on the coast here and have shipped some to the glue manufacturers in the furniture district around Grand Rapids, Michigan, and also the various glue manufacturers on the East Coast, and in every case our product has met with their approval as to quality and uniformity, and we know that our prices are in line, and have been getting repeat business from them. We believe that if you are not now using Soya Bean Flour in any of your products it would certainly be to your interest to investigate its use, and to that end we are glad to furnish you with what samples and information we have on the subject.

Awaiting your reply and trusting that we may be of some service to you, we are

Yours very truly,

LILLY'S—Seattle.

SEV-PE By S. E. Victor."

"November 1, 1928.

The Arabol Manufacturing
110 East 42nd St.,
New York, N. Y.

Via: Air Mail

Attention, Mr. A. M. Baumann: [129]

Gentlemen:

We thank you for your letter of Oct. 23d and we are glad to know that you are interested in Soya Bean Flour. We are sending you a 25 lb. bag of this material as a sample. We are sending you only the one grade which has been processed through 100 mesh. This is the grade that is in the greatest demand in this Section of the country, although we have made some flour as fine as 109 and 126 mesh. The various glue manufacturers seem to prefer the finer mesh, however they have been buying the 100 mesh inasmuch as the cost is less.

We are pleased to quote you a price of $65.00 per ton, F.o.b. Seattle, draft terms, in car lots, on this grade; or $70.00 per ton F.o.b. Seattle, draft terms, in less than car lots.

This is a comparatively new commodity on the market and considering the short length of time it has been used it has gained the approval of Glue Manufacturers in this locality. We have been told indirectly that Laucks & Company of Seattle handle hundreds of tons of this material each month, and it is said that they are using it both for Glue and for a wall tex-

ture. Several other manufacturers on this Coast and on the East Coast are buying the material in carload lots, and one of these manufacturers who turns out nothing but glue is now using four to five cars monthly. We see great possibilities for the use of Soya Bean flour in your territory and are pleased that you are taking an interest in it and will undoubtedly do some experimenting. We shall be pleased to hear from you as to what you think of the material and how your experiments work out.

Thanking you for the opportunity of quoting and submitting samples, and trusting that we may be of further service to you, we are,

Yours very truly,

THE CHAS. H. LILLY CO.,

SEV-PE By S. E. Victor."

were sufficient to show contributory infringement on the part of these defendants.

13. Because the Court erred in its finding and/or conclusion contained in its memorandum decision, which the Court by its decree attempted to adopt as its finding of fact and conclusions of law, that the stipulation and the two letters set forth in the last foregoing assignment, and which were copied, in said opinion, were sufficient to take the case out of the rule that one who sells to an infringer an article of commerce for an ordinary use unconnected with the product of the patent without

intent to [130] contribute to the manufacture of such product does not infringe.

14. Because the Court erred in its finding and/or conclusion contained in its memorandum decision, which the Court by its decree attempted to adopt as its findings of fact and conclusions of law, that the stipulation and the two letters which were set forth in the opinion and/or memorandum decision, and which are set forth in assignment No. 12 above, showed that it was the intent of these defendants that the articles sold by them should be used in the manufacture by their co-defendants of the products of plaintiff's invention.

15. Because the court erred in finding in its memorandum decision (which the court adopted as its findings of fact and conclusions of law), that Wilmot H. Lilly and The Chas. H. Lilly Co., have infringed claims 2, 4, 6, and 8 in the patents to Laucks & Davidson, No. 1689732.

16. Because the court erred in finding in its memorandum decision (which the court adopted as its finding of fact and conclusions of law), that Wilmot H. Lilly and the Chas. H. Lilly Company, have infringed claims 13 and 14 of patent No. 1691661, granted to Laucks & Davidson.

17. Because the court erred in making and/or entering paragraph 7 of the decree, as follows:

"7. That defendants Chas. H. Lilly Co., a corporation, organized and existing under and by

virtue of the laws of the State of Delaware, and/or Wilmot H. Lilly have and/or has contributorially infringed each of said two named Letters Patents as to the aforesaid mentioned claims of said Letters Patents, to-wit: Claims 2, 4, 6, and 8 of the United States Letters patent to Irving F. Laucks and Glenn Davidson No. 1,689,732, granted October 30, 1928, for 'Vegetable Glue and Method of Making-Same,' and Claims 13 and 14 of United States Letters Patent to Irving F. Laucks and Glenn Davidson No. 1,691,661, granted November 13, 1928, for 'Vegetable Glue and Method of Making Same,' said Claims being set forth in Paragraph 6 hereof."

18. Because the court erred in making and/or entering paragraph 8 of the decree herein, as follows: [131]

"8. That a Writ of Perpetual Injunction issue out of this court and under the seal of this Court directed to said defendants, Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, and each and every one of them perpetually enjoining and restraining the said defendants, their respective officers, directors, attorneys, agents, dealers, servants, representatives, workmen, clerks, employees, salesman, subsidiaries, and privies, and all others acting by or under their direction or authority and those in active concert or participating with them under the pains and penalties which may fall upon them and each or any of them in case of disobedience from directly or indirectly making or causing to

be made, selling or causing to be sold, using or causing to be used, contributing to the making or causing to be made, contributing to the selling or causing to be sold, contributing to the using or causing to be used, and/or threatening to manufacture and/or use and/or sell adhesive, glue or glues embodying or containing the inventions patented in and by said Letters Patents and/or encouraging or abetting such acts by others, and/or conspiring to infringe directly or indirectly in any wise the inventions patented in and by said Letters Patents, to-wit:

A. United States Letters Patent No. 1,689,732, granted October 30, 1928, to Irving F. Laucks and Glenn Davidson for 'Vegetable Glue and Method of Making Same' as respects Claims 2, 4, 6, and 8 thereof;

B. United States Letters Patent No. 1,691,661, granted November 13, 1928, to Irving F. Laucks and Glenn Davidson for 'Vegetable Glue and Method of Making Same' as respects Claims 13 and 14 thereof."

19. Because the court erred in making and/or entering paragraph 9 of the decree herein, as follows:

"9. That the plaintiff do recover from the said defendants, namely Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, the profits, gains and benefits which the said defendants have respectively, jointly or severally derived, received

or enjoyed by reason of their said infringement of said claims of said Letters Patents, or which may have accrued to them, jointly or severally by reason of the said infringement of said claims of said patents; and that the plaintiff do recover from the said defendants, either jointly or severally or any of them, as may upon a final accounting hereafter be determined, any and all damages which plaintiff has sustained or which may be sustained hereafter, by reason of the said infringing acts of said defendants. Evidence relative to both the profits and/or damages and evidence relative to the joint and/or several liability of said defendants for their infringing acts will be received by the hereinafter named Master of this Court."

20. Because the court erred in giving and entering a judgment against the defendants, The Chas. H. Lilly Co., and/or Wilmot H. Lilly for costs. [132]

20. Wherefore, each of these defendants pray that the decree be reversed as to each of them, and that the District Court be directed to dismiss the bill as to each of these defendants or in the alternative each of these defendants pray that the decree be reversed and that this Court enter a proper decree on the record.

Respectfully submitted,

JAY C. ALLEN,

WELDON G. BETTENS,

Solicitors for Wilmot H. Lilly and The Chas. H. Lilly Co., Respondents.

Service of the within paper by receipt of copy admitted this 1st day of August, 1932.

RAYMOND D. OGDEN,
WARD W. RONEY,
Attorneys for Complainant.

[Endorsed]: Filed Aug. 1, 1932. Ed. M. Lakin, Clerk. [133]

[Title of Court and Cause.]

WAIVER OF ASSIGNMENTS OF ERROR.

Come now Kaseno Products Co., a corporation, and George F. Linquist, and do hereby withdraw, waive, abandon and forever forego the assignments of error made and filed herein by them on August 1, 1932.

Dated this the 10th day of August, 1932.

KASENO PRODUCTS CO.,
By J. Y. C. KELLOGG,
Its Secretary

I concur in and approve the above.

J. Y. C. KELLOGG,
Attorney for Kaseno Products Co.

J. Y. C. KELLOGG,
Attorney for George F. Linquist.

Service of the within paper by receipt of copy admitted this 11th day of August, 1932.

RAYMOND D. OGDEN,
WARD W. RONEY,
Attorney for Complainant.

[Endorsed]: Filed Aug. 11, 1932. Ed. M. Lakin, Clerk. [139]

[Title of Court and Cause.]

PETITION FOR APPEAL.

The above named Wilmot H. Lilly and the Chas. H. Lilly Co., Kaseno Products Co., a corporation, and Geo. F. Linquist, defendants in the above action, feeling themselves and each of themselves aggrieved by the decree made and entered in this cause on the 11th day of July, 1932, do, and each of them does, appeal from said decree to the Circuit Court of Appeals for the Ninth Circuit, for the reason specified in the assignment of errors, which is filed herewith, they and each of them prays that their and his appeal be allowed and that citation issue as provided by law and that a transcript of the record, proceedings and papers upon which said decree was based, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Ninth Circuit sitting at San Francisco in the State of California.

And your petitioners, and each of them, prays that the proper order touching the security or bond on appeal to be required to perfect the appeal be made.

JAY C. ALLEN,
WELDON G. BETTENS,
Solicitors for said Defendants Wilmot H. Lilly and Chas. H. Lilly Co., Kaseno Products Co., a corporation, and George F. Linquist.

Service of the within paper by receipt of copy admitted this 1st day of August, 1932.
RAYMOND D. OGDEN and
WARD W. RONEY,
Attorney for Complainant.

[Endorsed]: Filed Aug. 1, 1932. Ed. M. Lakin, Clerk. [140]

The foregoing petition this day amended to include as petitioners Kaseno Products Co., a corporation, and George F. Linquist, defendants, is granted and the appeal allowed upon giving a bond conditioned as required by law in the sum of $250.00, and the above order signed August 4th, 1932, allowing the separate appeal of Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, and citation thereon, is vacated, and the Clerk is directed to lodge the vacated order and citation.

Signed near Esterbrook, Wyoming, Aug. 5th, 1932.

EDWARD E. CUSHMAN,
Judge of the District Court for the
Western District of Washington.

We do hereby acknowledge service upon us of the foregoing amended petition for appeal and the order of the Court allowing the same and fixing bond this 10th day of August 1932.

RAYMOND D. OGDEN,
WARD W. RONEY,
Attorney for Complainant,
I. F. Laucks, Inc.

[Endorsed]: Filed Aug. 10, 1932. Ed. M. Lakin, Clerk. [141]

[Title of Court and Cause.]

BOND ON APPEAL.

KNOW ALL MEN BY THESE PRESENTS, That we, Wilmot H. Lilly, the Chas. H. Lilly Co., a corporation, Kaseno Products Co., a corporation, and George F. Linquist, as principals, and Commercial Casuality Ins. Co., a corporation, as surety, acknowledge ourselves to be jointly and severally indebted to I. F. Laucks, Inc., a corporation, appellee in the above cause in the sum of $250.00, conditioned that, whereas, on the 11th day of July,

1932, in the United States District Court for the Western District of Washington, Northern Division, in a suit pending in that Court, wherein I. F. Laucks, Inc., a corporation, was complainant and Wilmot H. Lilly, the Chas. H. Lilly Co., a corporation, Kaseno Products Co., a corporation, and George F. Linquist were defendants, numbered on the Equity Docket as 659, a decree was rendered against Kaseno Products Co., a corporation, George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, and they having obtained an appeal to the United States Circuit Court of Appeals for the Ninth Circuit, and filed a copy thereof in the office of the Clerk of the Court to reverse the said decree, and a citation directed to the said I. F. Laucks, Inc., a corporation, citing and admonishing it to be and appear in the [142] United States Circuit Court of Appeals for the Ninth Circuit at San Francisco, in the State of California, thirty days after the date thereof, to-wit, thirty days after the 5th day of August, 1932;

Now, if the said Wilmot H. Lilly, the Chas. H. Lilly Co., a corporation, Kaseno Products Co., a corporation, and George F. Linquist, shall prosecute their appeal to effect and answer all costs if they fail to make their plea good, then the above

obligation to be void, else to remain in full force and virtue.

[Seal] WILMOT H. LILLY,
THE CHAS. H. LILLY CO.,
By W. H. LILLY,
Its President

Attest:
C. F. LARSEN,
Secretary

[Seal] KASENO PRODUCTS CO.,
By GEO. F. LINQUIST,
Its President
GEO. F. LINQUIST,
Principals.

Attest:
J. Y. C. KELLOGG,
Secretary

COMMERCIAL CASUALITY INS. CO.,
By J. GRANT,
Its Attorney in Fact,
Surety.

Dated Aug. 10, 1932.

The foregoing bond approved this 17th day of October, 1932.

EDWARD E. CUSHMAN,
Judge. [143]

State of Washington,
County of King.—ss.

On this 17th day of October, 1932, before me personally appeared J. Grant, to me known to be the attorney in fact of the corporation that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that she was authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

[Seal] WILLIAM F. DEVIN,
Notary Public in and for the State of Washington, residing at Seattle.

[Endorsed]: Lodged Aug. 20, 1932. Ed. M. Lakin, Clerk.

[Endorsed]: Filed Oct. 17, 1932. Ed. M. Lakin, Clerk. [144]

[Title of Court and Cause.]

FURTHER AMENDED STATEMENT OF EVIDENCE.

Come now the Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, defendants above named, and pursuant to Equity Rule 75, lodge with the Clerk of this Court a Second Amended Condensed Statement of the Evidence herein, containing further additional evidence proposed by appellants and by appellee, as follows:

TESTIMONY OF LEO W. EILERTSEN for Plaintiff.

Leo. W. Eilertsen, called as a witness on behalf of plaintiff, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

My name is Leo W. Eilertsen. I am forty years old and am secretary, treasurer and sales manager of the plaintiff company.

Being shown U. S. Reissue Patent No. 16422, marked Plaintiff's Exhibit 1 for identification, I identify it as the Johnson Patent, of which plaintiff company is the owner. (Plaintiff's Exhibit 1 for identification was then offered in evidence [145] and, over the objection of defendants' counsel, was received in evidence and marked Plaintiff's Exhibit No. 1. It was referred to by all parties during the trial as the Johnson Patent.)

(Testimony of Leo W. Eilertsen.)

Being shown U. S. Patent No. 1689732, marked Plaintiff's Exhibit 14 for identification, I identify it as the Laucks-Davidson Patent, covering vegetable glue and methods of making same, which patent is the property of plaintiff. (Plaintiff's Exhibit 14 for identification was then offered in evidence and was received in evidence and marked Plaintiff's Exhibit No. 14. It was referred to by all parties during the trial as the Caustic Soda Patent.)

Being shown U. S. Patent No. 1691661, marked Plaintiff's Exhibit 24 for identification, I identify it as the Laucks-Davidson Patent, covering vegetable glue and method of making same, which patent is the property of plaintiff. (Plaintiff's Exhibit 24 for identification was then offered in evidence and was received in evidence and marked Plaintiff's Exhibit No. 24. It was referred to by all parties during the trial as the Carbon Bisulphide Patent.)

Being shown a letter dated November 16, 1928, addressed to Chas. H. Lilly & Company, I identify it as a copy of the letter giving notice to Chas. H. Lilly & Co., together with the return registry receipt. (The letter identified by the witness was then offered in evidence and was received in evidence and marked Plaintiff's Exhibit No. 34.)

We published a notice of our patent rights in "The Timberman." (This testimony was objected

(Testimony of Leo W. Eilertsen.)

to by counsel for defendants upon the ground that if publication was made, it was incumbent upon plaintiff to establish the fact that defendants [146] knew of that publication. Counsel for plaintiff then stated that this evidence was for the purpose of showing that plaintiff made no secret of its patents and made known just what rights it had. The Court then asked if counsel for defendants was still objecting despite the declaration of plaintiff's counsel as to the purpose, and being advised in the affirmative, the Court overruled the objection.) Being shown a copy of "The Timberman," published in September, 1925, I point out a notice on page 150, reading as follows:

"GLUE FROM SOYA BEANS
PATENTED

Notice is hereby given that our patents give us
EXCLUSIVE RIGHTS to the use of
SOYA BEANS AND SOYA BEAN FLOUR
For Glue Making Purposes
PATENTS GRANTED—OTHER PATENTS
PENDING
I. F. LAUCKS, INC.
SEATTLE, U. S. A.
Manufacturers of
LAUCKS Waterproof
Glue .....'LAUXEIN' "

(Testimony of Leo W. Eilertsen.)

(Counsel for defendants objected to this evidence on the further ground that the notice read by the witness was published before plaintiff had obtained the issuance of any patents in suit and referred to no specific patent, and upon the ground that it was incompetent, irrelevant and immaterial. The objections were overruled.) "The Timberman" is an international lumber journal which is generally subscribed to by the veneer and lumber trade and is generally used as an advertising medium [147] by glue manufacturers. (The publication referred to by the witness was then offered in evidence and, over the aforesaid objections of defendants' counsel, was received in evidence and marked Plaintiff's Exhibit No. 35.)

Being shown a copy of "The Timberman," published in November, 1928, I point out a notice on page 105, reading as follows:

> "Announcing issue of patents affecting manufacture and use of vegetable protein glues. For some years past I. F. Laucks, Inc., chemists, have manufactured water resistant glues from raw materials hitherto unknown and unused for glue making. This was made possible through research work extending over many years and great expense, with the idea that I. F. Laucks, Inc., would produce adhesives of uniformity and high quality at a cost which would effect remarkable savings to the user.

(Testimony of Leo W. Eilertsen.)

"The widespread adoption of Lauxein waterproof glues by the trade confirms that this ideal has been largely attained. We express our appreciation for the support and cooperation which our many customers have given us. Our research laboratories are available to assist them in working out their special problems.

"In order to protect the investment in research for the production of Lauxein glues and to justify future development work, numerous applications for patents have been made in the United States and foreign countries and since no concern can incur the risk and speculation attendant upon research unless patent protection can be expected, I. F. Laucks, Inc., will be obliged to enjoin unauthorized manufacture and use of glues covered by their patents, either by way of direct or contributory infringement.

"Patents recently granted to I. F. Laucks, Inc., in the United States are the following:

"U. S. Patent No. 1,689,732, dated October 30, 1928. Covering broadly the use of caustic soda with vegetable protein flours for adhesive purposes.

"U. S. Patent No. 1,691,661, dated November 13, 1928. Covering broadly the use of carbon bisulphide and like materials with vegetable protein flours for adhesive purposes. [148]

(Testimony of Leo W. Eilertsen.)

"Our products are also protected by the U. S. Patent Reissue 16,442. Other patents pending.

I. F. Laucks, Inc."

(Counsel for defendants objected to the reading of this notice in evidence upon the ground that it contained many self-serving statements and was incompetent. The objection was overruled. Counsel for defendants then specifically objected to that portion of the notice referring to U. S. Patent Reissue No. 16,442, upon the ground that there was no such patent in suit, the Johnson Patent being U. S. Patent Reissue No. 16,422. The court said that the portion specifically objected to would be disregarded. The publication referred to by the witness was then offered in evidence, and, over the objections of the defendants' counsel, was received in evidence and marked Plaintiff's Exhibit No. 36.)

All the goods which we sold were marked "Patented." Being shown a tag, I identify it as one of our early tags used as of date of October 15, 1925. Being shown another tag, I identify it as a tag of a subsequent date, within a year or two of the tag last identified. Being shown another tag, I identify it as a tag used shortly after that last referred to. Being shown a green tag, I identify it as a tag placed on our glue during the year 1928. (The four tags identified by the witness were offered in evidence and, over the objections of defendants' counsel, were received in evidence and

(Testimony of Leo W. Eilertsen.)

marked Plaintiff's Exhibits Nos. 37, 38, 39 and 40, respectively.)

Being shown a tag, I identify it as a tag which we used from 1926 to the present time. The "5-F" printed on the tag describes the kind of glue this tag was attached to, which glue contained the ingredients of the Johnson formula, that is, soya [149] bean, lime and sodium fluoride. Being shown another tag, I identify it as a tag attached to our "1-X" glue, which also contains the ingredients of the Johnson Patent—soya bean, lime and sodium fluoride. This tag was attached to the goods which we sold. (The two tags thus identified by the witness were offered in evidence and, over objection of defendants' counsel, were received in evidence and marked Plaintiff's Exhibits Nos. 43 and 44, respectively.) Plaintiff started work on glues in 1923 and sale was made to the Olympia Veneer Company as early as August, 1923.

These glues were ordinarily sold in carload lots of about 20 tons to the carload.

In 1926 the Fir plywood manufacturers greatly needed improved water resistance in their product. I. F. Laucks, Inc., in April, 1926, introduced CS_2 for the purpose of increasing the water resistance of the glue.

The first company that I knew of to infringe the patents in suit of the plaintiff was the Kaseno Products Co. This was in April, 1926. The Kaseno

(Testimony of Leo W. Eilertsen.)

Products Co. were using a soya bean glue in which they were using carbon bisulphide.

The plaintiff company began the manufacture of glue in 1923, and since that date has been continuously operating as a manufacturer of waterproof glues. About 95% of these glues have been made out of seed residue glue bases. Up to 1923 no other company had been manufacturing glues made from seed residue flours, more especially soya bean flour.

Plants of plaintiff are located at Seattle, Washington and Bloomington, Ill. Plaintiff is the largest manufacturer of water resistant glues. Consumption of soya bean glues in the [150] year of 1929 was 7,000 tons. (Plaintiff's Exhibit No. 74 was admitted in evidence.)

In 1923 there were no veneer plants using soya bean glues. By the end of 1928 every plant on the Pacific Northwest was using vegetable seed residue glues, that is to say, soya bean glues. By the Pacific Northwest is included Oregon, Northern part of California and Washington. Casein and starch were then used only for special purposes, the big bulk of plywood being glued with seed residue glues.

The glues which the soya bean glues replaced in the veneer plants between the years 1923 and 1928 were what is known as "casein glues."

All this was accomplished with the expenditure of $17,000 (Seventeen Thousand Dollars) for advertising from 1923 to Jan. 1, 1930. The total invest-

(Testimony of Leo W. Eilertsen.)

ment in the business of I. F. Laucks, Inc., in 1930, was $400,000 (Four Hundred Thousand Dollars).

Casein Mfg. Co., largest manufacturer of casein in the world, voluntarily and of its own accord took out licenses under the patents in suit from plaintiff.

Under the patents in suit, plaintiff company manufactures glue from soya beans and soya bean flour. This glue is used for veneering, that is, in the manufacture of plywood. The plaintiff company entered into the manufacture of soya bean seed residue glue and vegetable seed residue glues in the early part of the year 1923. Plaintiff company instructed the users of its glues to add caustic soda in mixing the glues in the year 1923. The use of carbon bisulphide commercially in the plants commenced in April, 1926. After we originally introduced the use of caustic soda, we discontinued its use for a period in some [151] formulae. During this period, we stressed our ready mixed glue, which did not contain caustic soda. At the end of the year 1926, we reintroduced the use of caustic soda as such commercially. Prior to the time we reintroduced the use of caustic soda at the end of 1926, none of the defendant companies were using caustic soda, to my knowledge. None of the defendant companies were using carbon bisulphide as a water resistant agent, or otherwise, commercially, prior to the use of this chemical by plaintiff company. If the defendants had been using caustic

(Testimony of Leo W. Eilertsen.)

soda or carbon bisulphide prior to the time these chemicals were used by plaintiff company, I believe I would have known it. We did not introduce carbon bisulphide previous to the year 1926 because of the inflammability of carbon bisulphide. In 1923 and 1924, plaintiff's glue was used by the Olympic Veneer, at Olympia, Washington, and the Tacoma Veneer, at Tacoma, Washington.

About February 28, 1928, I had a conversation with Mr. Wilmot H. Lilly in our office. Mr. Godman, our purchasing agent, and Mr. Laucks, our President, were present. Mr. Wilmot H. Lilly said that he had been grinding soya bean flour and had sold at least two (2) carloads in the East for use in glue, and was also supplying the Kaseno Products Co. with at least some quantities. We discussed the matter of them supplying us with soya bean flour, ground to our specifications.

Mr. Lilly said that his production was about three (3) tons in eight hours. Our requirements were considerable more than that, and Mr. Lilly said he would have to put in additional equipment to take care of us, in case we wanted more than that quantity. We placed an order with him to see whether he could produce what we wanted. Subsequently we made other purchases [152] from him. Mr. Lilly said he had sent out samples of soya bean flour to several of the veneer plants, as he understood that they were going to manufacture their own glue, or were manufacturing their own glue.

(Testimony of Leo W. Eilertsen.)

(A stipulation entered into between plaintiff company and the defendant, The Chas. H. Lilly Co., in Cause No. 621, was offered in evidence and without objection was admitted in evidence and marked Plaintiff's Exhibit No. 11. A stipulation entered into between plaintiff company and the defendant, The Chas. H. Lilly Co., in Cause No. 659, was offered in evidence and without objection was admitted in evidence and marked Plaintiff's Exhibit No. 13. A stipulation running between the Kaseno Products Co. and the plaintiff company was also admitted in evidence and marked Exhibit 10.)

Cross-examination.

We advertised in "The Timberman" and "Veneers." There were about eight mills to advertise among in 1923.

Kaseno Products Company was furnishing glues containing soya bean meal to the trade from 1923 to 1926. The first glue made by plaintiff with sodium fluoride, lime and soya bean flour, and sold commercially, was in July, 1925.

We may have asked Mr. Wilmot H. Lilly not to sell soya bean flour to anyone other than the plaintiff company. I would not say Mr. Lilly stated that some glue had been shipped back east. I amend that and say that he stated he had shipped some soya bean flour back east. I was in error if I said Mr. Wilmot H. Lilly told us that some glue had been shipped back east.

TESTIMONY OF W. F. SHELLY
for Plaintiff.

W. F. Shelly, called by plaintiff, being first sworn, [153] testified in part on direct examination, other portions of the testimony of the witness not being set forth:

Direct Examination.

I am thirty-eight years of age, salesman and service man, in the employ of I. F. Laucks, Inc.

Soya bean glue did not behave the same as starch glues or casein glues to which the users were accustomed.

Soya bean glue was derisively called "bean soup" in the early years of its introduction.

TESTIMONY OF S. E. VICTOR
for Plaintiff.

S. E. Victor, called as an adverse witness on behalf of plaintiff, testified as follows:

Direct Examination.

My name is S. E. Victor. I am employed by The Chas. H. Lilly Co., as purchasing agent. Being shown a letter marked Plaintiff's Exhibit 59 for identification, I identify the signature thereon as my own. Being shown a letter marked Plaintiff's Exhibit 60 for identification, I identify the signature thereon as my own. I wrote both of these letters. (The two letters identified by the witness

(Testimony of S. E. Victor.)

were then offered in evidence. Defendants' counsel objected to the admission of these letters in evidence upon the ground that they were immaterial. The objection was overruled and exceptions asked and allowed. The letters were received in evidence as Plaintiff's Exhibits Nos. 59 and 60, respectively.)

Cross-examination.

The rubber stamp which is on Plaintiff's Exhibits Nos. 59 and 60 was not there when I signed the letters. I have no idea who put the stamp there. Plaintiff's Exhibit No. 60 is in [154] answer to a letter we received from the Arabol Manufacturing Company of date October 23rd. We had not received a letter from the Arabol Manufacturing Company prior to the 17th, when I wrote Plaintiff's Exhibit No. 59.

TESTIMONY OF ROGER E. CHASE
for Plaintiff.

Roger E. Chase, called by plaintiff, being first sworn, testified in part on direct examination, other portions of the testimony of the witness not being set forth:

Direct Examination.

I am president and manager of a small corporation by the name of "R. E. Chase & Co."

I was appointed as sales agent for the sale of Laucks' new soya bean glue in July, 1923, shortly before the first sales were made.

(Testimony of Roger E. Chase.)

The selling of that glue was about the toughest proposition I have ever tackled. We sold very little in 1923. This new glue did not look or behave like the glues the plywood plants were used to. In the fall of 1923 it was general knowledge that we were using soya bean flour as the glue base in our products.

TESTIMONY OF BRUCE CLARK
for Plaintiff.

Bruce Clark, called by plaintiff, being first sworn, testified in part on direct examination, other portions of the testimony of the witness not being set forth:

Direct Examination.

I am manager of the plywood department of Elliott Bay Mill Company at Seattle.

The plaintiff, I. F. Laucks, Inc., was the first to introduce soya bean glue to the veneer or plywood industry of the Northwest. [155]

TESTIMONY OF MICHAEL SAVELSON
for Plaintiff.

Michael Savelson, called by plaintiff, being first sworn, testified in part on direct examination, other portions of the testimony of the witness not being set forth:

Direct Examination.

I am American agent for the Anglo-Chinese Eastern Trading Company, the head office of which is in London, England. Soya bean cake is a by-product (side product) of the main product oil obtained from soya beans.

(The plaintiff thereafter rested its case. Defendants' counsel thereupon, on behalf of the defendant, Wilmot H. Lilly, moved for a dismissal upon the ground that not one single word had been uttered in evidence about said defendant except that he was president of The Chas. H. Lilly Co. The court stated that it was unsatisfactory to decide a case piecemeal, and denied the motion. An exception to this ruling of the court was asked and was by the court allowed. Defendants' counsel, on behalf of the defendant, The Chas. H. Lilly Co., moved for a dismissal upon the ground that there was not sufficient evidence against said defendant to show that it was a contributor to any infringement, if any infringement was had, and upon the ground that there was not a single word of evidence introduced that went to show that said defendant sold any soya bean flour or any material with

(Testimony of Michael Savelson.)
knowledge that it was to be used in the infringement of any patent. After listening to argument by counsel in support of this motion, the court denied the motion. An exception was asked and was by the court allowed.)

(Counsel for the plaintiff stated that some days ago plaintiff gave notice that it would make certain disclaimers in [156] connection with the Johnson Patent and also in connection with the Caustic Soda Patent. He offered in evidence certified copies of the filing of said disclaimers and of the disclaimers themselves. Counsel for the defendants objected to the filing of the disclaimers upon the ground that inasmuch as the case had been pending in court for a long time, it was too late to permit disclaimers without terms. The court overruled the objection, stating that if there was anything in the objection on the question of costs, the justification of counsel's request for terms might be presented in connection with the submission of the entire case. The disclaimer in connection with the Johnson Reissue Patent was admitted in evidence and marked Plaintiff's Exhibit No. 76. The disclaimer in connection with the Caustic Soda Patent was admitted in evidence and was marked Plaintiff's Exhibit No. 77.)

TESTIMONY OF GEORGE LINQUIST
for Defendants.

George Linquist, called as a witness on behalf of the defendants, testified as follows:

Direct Examination.

I am president of the defendant corporation, Kaseno Products Company. I commenced the manufacture of adhesives in 1917, manufacturing marine glues at that time. We still make marine glues. In 1918 we organized the Bitumolin Company, a corporation. Later the name of this corporation was changed to Kaseno Products Company, the defendant corporation. We manufactured deck glue and some liquid marine glues. In 1920 we commenced to manufacture casein glues. We started the manufacture of veneer glues in 1920. [157]

In 1923, when the price of casein rose rapidly, we immediately tried to find something that we could use to cheapen our glues. We immediately thought of soya bean. We then used soya bean meal to cheapen our glue. We ground the meal as fine as we could grind it on the type of mill we had in our plant. We tried it out at the Elliott Bay Mill with very good success. We then put in flour equipment to bolt it down to a finer mesh. This soya bean meal was mixed with casein glue in the Elliott Bay Mill plant. There was no change in the chemicals employed in making this casein-soya bean glue over the chemicals that were employed in mak-

(Testimony of George Linquist.)

ing casein glue. We designated the soya bean meal "B-Casein." It was to be used in connection with casein, and was actually so used by the Elliott Bay Mill Company in October, 1923, and during the next three or four months. During that period, we supplied the Elliott Bay Mill Company approximately 50,600 pounds of soya bean meal. Of this Fifty Thousand, Six Hundred (50,600) lbs. of soya bean meal some was really flour which we had bolted out.

We are now making two soya bean glues, and we denote them as No. 26 glue and No. 3355 glue. No. 26 glue contains water, soya bean meal, blood, copper sulphate, caustic soda, hydrated lime, silicate of soda, viscose and hexamethylenetetramine. No. 3355 glue contains water, soya bean meal, caustic soda, hydrated lime, silicate of soda, viscose and hexamethylenetetramine.

Cross-examination.

In the latter part of 1920 or the early part of 1921 we bought casein at a price of five cents a pound. I know of a large quantity of casein that sold at two and one-half cents per [158] pound in 1920. My recollection is that in 1921 the New York market price of casein was around seven to seven and one-half cents per pound. I can buy casein laid down in Seattle today for six cents per pound. During the year 1923 the price of casein went from eleven and one-half cents to twenty-seven cents per pound in a short space of time. It stayed at twenty-

(Testimony of George Linquist.)

six cents for not more than a month or two. Within six months it dropped to seven and one-half cents per pound. Because of this great rise in price in 1923 we used soya bean meal to cheapen our casein glue. The soya bean meal which we so used sold at somewhere around four and one-half cents a pound. The price of casein at this same time was twenty-one cents per pound. We used with this casein, 10 per cent soya bean meal, that is to say, with 90 pounds of casein we would use approximately 10 pounds of soya bean meal. After this use during the three or four months we then entirely discontinued its use.

We recommended that soya bean meal be used in the proportion of 10%. Mr. Steinhart used more—I think 7 to 15%, and maybe more. We sold him the soya bean flour. They made their own mix of soya bean flour and casein at the plant of the Elliott Bay Mill Company.

We first used carbon bisulphide in a laboratory test, July 9, 1927, and March 1, 1928, we made our first commercial purchase. This purchase was in drums, 50 per cent carbon bisulphide and 50 per cent carbon tetrachloride. We used tetrachloride because of the fire hazard connected with the use of straight carbon bisulphide. Later, in 1928, we commenced the use of what is known as the Marvin solution. This Marvin solution contained 50 per cent carbon bisulphide. Following the [159] Marvin solution we used viscose instead of the

(Testimony of George Linquist.)

Marvin solution. This viscose was used in what we called our NK solution.

The formula for this viscose by quantity parts was: water 300, caustic 110, add 5 gal. of water and 210 pounds carbon bisulphide.

The Marvin solution had fifty per cent carbon bisulphide in it. The use of the Marvin solution materially increased the water resistance of the glue. The Marvin solution was used up to January 1, 1929.

We did not make any soya bean glue, using soya bean as the whole adhesive base, until we commenced making our present 3355 glue. We always built up the protein content of the glue base. We have built it up with vegetable casein, animal casein, and with blood.

All during 1927, we used an isolated vegetable protein as a glue base. We have not used an isolated vegetable protein since November, 1927. The isolated vegetable protein which we used during 1927 was the protein from soya beans. We extracted it ourselves. We made a milk out of it and then extracted it in the regular procedure in which casein was manufactured. In some cases, we precipitated it with sulphuric acid.

When asked how much of this formula, referring to isolated protein, was used, Mr. Linquist testified as follows:

> "Q. How long did you use an isolated vegetable protein as a glue base?

(Testimony of George Linquist.)

A. All during 1927.

Q. 1927?

A. Commencing about in August, 1927, we used it over a period up to November or December, 1927.

Q. So for a period there from August, 1927, to November, 1927, you used an isolated vegetable protein? [160]

A. Yes.

Q. Have you used any since?

A. No."

* * * * * * * * * *

"Q. What percentage of this isolated vegetable protein did you use in your glue base between August, 1927, and November?

A. We used up to six and one-half pounds. I have a recollection that we did use ten pounds at some time.

Q. Let us take the dry adhesive base on the basis of 100 pounds. How much soya bean flour would you have in there?

A. What glue are you referring to?

Q. The time you used your isolated protein down here.

A. Do you want the formula for the glue?

Q. From August, 1927. I do not know what you call it.

A. The glue that was turned out, it had soya meal, 65; tri-sodium phosphate, 6; sodium

(Testimony of George Linquist.)

perborate, 1; sodium fluoride, 1; vegetable casein, 10, and lime, 18."

* * * * * * * * * *

"Q. Between August, 1927, to November, 1927, how much of the glue did you sell to the veneer plants that contained within its glue base any of this isolated vegetable protein?

A. I don't know. I wouldn't know without making a check of it.

Q. Did you sell any?

A. Yes.

Q. A carload?

A. Oh, I would guess a carload.

Q. You think a carload would be the outside?

A. I don't know. I am guessing for you.

Q. To whom did you sell it? [161]

A. We used it at the Elliott Bay Mill, and I don't know whether we used it anywhere else or not. The only thing that shows here is the Elliott Bay Mill, on this memorandum I have got."

We quickly discontinued its use because of the fact that we were not in a position to manufacture the vegetable casein (soya bean isolated protein) in a large quantity and the price of casein had dropped. I have no personal knowledge that what we were making was an isolated vegetable protein except that I thought it was. I am not a chemist.

(Testimony of George Linquist.)
I never had the product analyzed, but I am satisfied it must have been an isolated protein.

We have made a glue using casein and soya bean flour as a glue base. Glue No. 2598 is such a glue. It contains casein, 25 pounds; tri-sodium phosphate, 9 pounds; lime, 4 pounds, and soya bean flour, 62 pounds. I used casein and soya bean in 1924 and 1925. I have no record of those glues. In 1929, we made a glue which had 60 pounds or more of soya bean flour for every 100 pounds of dry adhesive base. We made such a glue in 1925, 1926, 1927, and, I think, in 1924. In 1928, soya bean was 52% of the glue base.

From 1924 down to the present time, in making glues which contained 60 pounds or more of soya bean flour with every 100 pounds of dry base, we have made such a glue in which we did not use the combination of caustic soda and lime. A formula for such glue, which was sold commercially, is the following: Lactic casein, 3 pounds; soya bean flour, 10 pounds, tri-sodium phosphate, ½ pound; hydrated lime, 3 pounds. Thirty-three pounds of that base was used with tri-sodium phosphate, ¼ pound; perborate of soda, .30, and silicate of soda, 8 pounds. Then a sol- [162] ution was put in. We used no caustic soda in this solution. There is no carbon bisulphide in this solution. There is no alkalinity in this solution. This glue does not contain caustic soda as such and lime. We ran this glue at the

(Testimony of George Linquist.)

Elliott Bay Mill from September, 1926, to November, 1926.

Another glue which we turned out, in which soya bean flour was at least 60% of the dry adhesive base and which did not contain the combination of caustic soda and lime, was made up of the following formula: Casein, 18 pounds; soya meal, 60 pounds; tri-sodium phosphate, 4¾ pounds; sodium perborate, 1 pound, and lime, 18 pounds. The glue made from this formula was used at the Elliott Bay Mill from December, 1926, to October, 1927. During that period, we sold a good deal of that glue to others. We sold a considerable tonnage of glue made according to that formula.

After March, 1928, we first used carbon bisulphide with our glues. After that the Marvin solution and after that viscose contained in our NK solution was used for the purpose of increasing the water resistance of the soya bean glue. The first use of caustic soda as such was in March, 1927. After March, 1927, and up to February, 1928, caustic soda as such was used in certain of our soya bean glue formulas. Since February, 1928, and up to the time of the giving of the testimony of the witness in May, 1931, the Kaseno Products Company used caustic soda as such with lime rather constantly in its soya bean glues. In one certain formula the percentage of soya bean flour in the glue base was as high as ninety-six per cent. From 1924 to 1929

(Testimony of George Linquist.)
the glue base used by Kaseno Products Co. contained at least 52% of soya bean flour. [163]

Recross Examination.

We started to sell our full seed residue glues in the latter part of 1924 or the early part of 1925.

We bought soya bean meal from The Chas. H. Lilly Co. The soya bean meal we bought from that company we ourselves ground in our own mill. We also bought soya bean flour from that company. We once bought soya bean flour from the Fisher Flouring Mill. With the exception of that bought from the Fisher Flouring Mill, all of the soya bean flour we have bought was purchased from The Chas. H. Lilly Co. When we bought flour, we did not regrind it. The flour we bought from The Chas. H. Lilly Co. was their regular flour that they made right along. It was the fine mesh that we wanted. It was not particularly ground to glue specifications. In our glue specifications we used flour of 100 mesh or better. When we bought flour from The Chas. H. Lilly Co. it was ground to 100 mesh or better. The Chas. H. Lilly Co. knew that the flour they were selling us was being used for glue making purposes in 1927, 1928, 1929 and 1930. I judge they knew it up to the present day. I do not see how they could help it. I wouldn't say that they knew it in 1927. I don't know whether we bought any from them in 1927.

TESTIMONY OF WM. D. FAWTHROP
for Defendants.

Wm. D. Fawthrop, chemist for the Kaseno Products Company and witness for the defendants, on direct examination testified in part, other portions of the testimony of the witness not being set forth, referring to the NK solution used by Kaseno Products Company in the making of its soya bean glue subsequent to the time that it ceased using carbon bisulphide as such: [164]

Direct Examination.

"Q. Are you familiar with the NK solution?

A. Yes, sir.

Q. Which is used by the Kaseno Products Company in making its glue?

A. Yes, sir.

Q. Of what is this NK solution composed?

A. Rice hulls, caustic soda, carbon bisulphide and water.

Q. I think probably you misunderstood me. The question was, what is the NK solution composed of?

A. The NK solution, rice hulls, caustic soda, carbon bisulphide, and water, and also hexamethylenetetramin in solution.

Q. And of what is the hexamethylenetetramin in solution composed?

A. Formaldehyde, ammonia and water.

(Testimony of Wm. D. Fawthrop.)

Q. The rice hulls, caustic soda, carbon bisulphide and water make what?

A. Viscose.

Q. State whether or not your NK solution has always been composed of the ingredients which you have named?

A. Yes; always."

Cross-examination.

"A. I prefer to give it on the smaller basis, because that is more recent. We have made several slight changes, and it is rather confusing. So the present form we mix it in is 38 pounds of rice hulls, 83 pounds of caustic soda, and I believe it is 210 pounds of CS_2, altogether.

Q. And how much water?

A. 40 gallons of water, we use. That is about 320 pounds of water."

* * * * * * * *

"Q. Now, you are over in the plant, and you start to make this glue in the glue pot. Now, what do you do over there? [165]

A. With the dry glue?

Q. Yes.

A. Well, we put in 300 pounds of cold water, but sometimes the amount of water varies according to the particular variety of flour you might have. Some requires more water than others.

(Testimony of Wm. D. Fawthrop.)

Q. Then what?

A. After we put in the water we put in the dry glue, and mix that for seven minutes.

Q. And then what do you do?

A. Add nine pounds of caustic soda in 15 pounds of water, and mix that for two minutes. Then we add 10 pounds of lime in a mixture with 20 pounds of water. That is a milk of lime.

Q. 10 pounds of lime?

A. Yes; mixed with 20 pounds of water. Then mix that for three minutes, and add 25 pounds of silicate of soda in solution. Then mix that for three minutes.

Q. Mix that for three minutes more?

A. And then we add five pounds of NK solution.

Q. Five pounds of NK solution?

A. Yes, mixed with five pounds of water.

Q. And then your glue is ready to use?

A. No. You have to mix it for four minutes, and then it is ready for use.

Q. How about this NK solution, does it stay pretty stable?

A. Well, the action of viscose seems to collect the water from the solution there, and it begins to swell up. It is not stable. It will last probably two months or six weeks without any material change.

(Testimony of Wm. D. Fawthrop.)

Q. If you had not put the additional 90 pounds of caustic soda in that viscose and hexamethylenetetramin would it then have fallen out?

A. Well, it would not have been produced, probably. The viscose is not produced without the addition of the caustic soda that I mentioned. In our particular solution I am referring to. [166]

Q. I am talking about the last 90 pounds that you added.

A. I know that. I say that the viscose is not produced in a clear solution until the additional caustic soda has been put in.

Q. Well, the viscose reaction, as such, to the point of solubility, has been complete before you put in this additional 90 pounds, hasn't it?

A. Yes; the viscose has really been produced previously, but it will not stay in the solution unless the additional caustic soda is put in.

Q. If you did not put in that 90 pounds of caustic soda would the solution fall out?

A. The solution is just merely a suspension of viscose, rather than a solution."

* * * * * * * *

"Q. Now, why do you add this NK solution to the glue?

(Testimony of Wm. D. Fawthrop.)

A. To make waterproofing—to make it waterproof."

* * * * * * * *

"Q. Does it increase the water resistance?

A. That is our object. That is the only—that is one of the objects of putting the solution in, to make it water resistant."

TESTIMONY OF JACK SLOAN
for Defendants.

Jack Sloan, an employee of Kaseno Products Company for four years, called as a witness on behalf of the defendants, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

To the combination of 38 lbs. of rice hulls, 173 lbs. of caustic soda and 210 lbs. of carbon bisulphide, there were later added ammonia, formaldehyde and water, and this mixture constituted the NK solution used by the Kaseno Products Company in the making of its glue. [167]

TESTIMONY OF HUGH R. RIPPE
for Plaintiff.

Hugh R. Rippe, called as a witness on behalf of the plaintiff, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

I am chief chemist for Laucks Laboratories. I have made a chemical analysis of the NK solution (Plaintiff's Exhibit No. 109) used by Kaseno Products Company. This analysis showed the presence of no free carbon bisulphide in the NK solution (Plaintiff's Exhibit No. 109). (This analysis was admitted in evidence as Plaintiff's Exhibit No. 118.)

TESTIMONY OF DAVIS M. WOOD
for Defendants.

Davis M. Wood, a chemist, called as witness on behalf of the defendants, testified in part on cross-examination, other portions of the testimony of the witness not being set forth, as follows:

"Q. Suppose you had 38 pounds of rice hulls, and you add 83 pounds of caustic soda, 26 per cent concentration, 210 parts of CS_2, 320 parts of water, and after a little while you add 90 pounds of caustic soda in 100 pounds of water, what happens?

A. You get a viscose formation, for one thing.

(Testimony of Davis M. Wood.)

Q. All right; how much CS_2 is it going to take to make viscose out of 38 pounds of rice hulls?

A. Not a terrible lot.

Q. What?

A. Not a terrible lot. I don't know just how much.

Q. Well, roughly how much?

A. Oh, I would guess at it, 20 pounds would be sufficient.

Q. All right; we have got 20 pounds of our carbon bisulphide that we use to make viscose with; now, that leaves us 190 pounds left. What became of it? [168]

A. I don't know. I didn't see it.

Q. You did not find any?

A. No.

Q. If it had been there you would have found it?

A. Yes; I would have found it if there had been any there.

Q. What do you think happened in that combination of caustic soda and CS_2?

A. Oh, you probably get the formation of some thiocarbonate there. How much, I couldn't say.

Q. Would it have been a sodium thiocarbonate?

A. If you had caustic soda, yes.

(Testimony of Davis M. Wood.)

Q. I am not asking you 'if'—it is there, isn't it?

A. Yes.

Q. Now, when viscose is regenerated you say it throws off thiocarbonate?

A. Yes, sir; that is my opinion, that at least part of its decomposition products are thiocarbonate.

Q. Is it sodium thiocarbonate?

A. Yes."

TESTIMONY OF NAT. S. ROGERS
for Defendants.

Nat. S. Rogers, called as a witness on behalf of defendants, testified in part on cross-examination, other portions of the testimony of witness not being set forth, as follows:

Cross-examination.

I was employed by Kaseno Products Co. until May, 1924, and since it was generally noised around and generally known that Laucks were working with soya bean glues at the Olympia Veneer, we knew this at Kaseno Products Co. I do not know whether this was in 1923 or 1922, but it was known by us before 1924. [169]

TESTIMONY OF WILMOT H. LILLY
for Defendants.

Wilmot H. Lilly, called as a witness on behalf of the defendants, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

My name is Wilmot H. Lilly. I am one of the defendants in this case, and for five years have been president of the defendant, The Chas. H. Lilly Co. I have been actively connected with the operation of that company for twenty-five years. The Chas. H. Lilly Co. first commenced the manufacture of soya bean flour in about 1916 or 1917. At that time the flour was manufactured for use as tree spray and for edible purposes. The company has continued the manufacture of soya bean flour ever since. It is hard to tell the quantities we milled in 1916 and 1917. Sometimes we would sell a ton of it and sometimes a carload of it, a comparatively small quantity. We haven't sold any soya bean flour for spray purposes very recently. Up until 1924 the amount of soya bean flour we were milling was not great. The big increase came along in 1926 and 1927.

We have been milling soya bean flour from 1916 and 1917. We have been selling locally, in California, Michigan and Pennsylvania. We sold it wherever we could get orders for it. We have what we call our regular soya bean flour. Our reg-

(Testimony of Wilmot H. Lilly.)

ular soya bean flour, ground in the usual manner, is all practically 100 mesh or better; that is, it goes through a 100 mesh screen or better. That is our standard soya bean flour and is used for tree spray and edible purposes. When our company receives an order for soya bean flour, we grind it 100 mesh or better; that is our regular fineness. [170]

We have sold our product to I. F. Laucks, Inc. We first furnished them with soya bean flour in February, 1928. They wanted five tons. The flour we sold them was our standard product, ground to 100 mesh or better. We furnished them soya bean flour for approximately a month and a half, furnishing them better than 100 tons during that time. It was all ground to the same fineness, 100 mesh or better. There were a number of shipments. We continued to supply soya bean flour to Laucks until the latter part of April, 1928. We have received no orders since that time.

During that time we were furnishing soya bean flour to the Kaseno Products Co. The flour sold to the Kaseno Products Co. was, I think, ground to the same specifications as the Laucks' flour. We first commenced to furnish soya bean flour to the Kaseno Products Co. in either 1926 or 1927. Prior to that time we had sold them soya bean material. The difference between meal and flour is that the meal is a cake ground up on some sort of mill that does not get it down to the fineness of flour. The flour is ground by a different process, milled

(Testimony of Wilmot H. Lilly.)

through a silk cloth to make the flour. Flour is meal further processed. Up to 1926 or 1927 we furnished them soya bean meal. Since that time we have been furnishing them soya bean flour ground to 100 mesh or better.

During the period of time we furnished the Kaseno Products Co. with soya bean flour, ground to our standard specifications, we were furnishing soya bean flour to other persons or corporations in the United States. We sell just as much as we can. We try to sell to anybody that will buy it. We sell to anybody that we can sell flour to, like grocery stores, spray manufacturers, glue people and furniture manufacturers. [171]

The Chas. H. Lilly Co. at this time operates a flour mill, and is engaged in the fertilizer business and seed business. We grind wheat flour, principally, bran, whole wheat, and we have ground rice flour, various kinds. We grind any type of flour we can sell. We built our flour mill in 1905. Since that time we have been engaged in the milling of different kinds of flour.

The Chas. H. Lilly Co. has never been engaged in the treating or processing of flour with chemicals of any kind. We never had anything to do with that. We have never at any time treated the soya bean flour we sold to the Kaseno Products Co. with chemicals. Since 1927 we have ground approximately 150 tons of soya bean flour per month. Since 1927 we have imported an average of 1800

(Testimony of Wilmot H. Lilly.)

to 2000 tons of soya bean meal a year. We imported it from the Orient. Approximately 150 tons is processed into flour each month, and disposed of wherever we can find a market.

The Chas. H. Lilly Co. has attempted to develop markets for soya bean flour. We have written letters to everybody that we thought would be interested in it. My brother travels in the east, and has stopped at various places to inquire if there is any market for flour. Those letters were sent out to other concerns than glue manufacturers. I have interviewed calcimine companies and spray manufacturers in California. I have interviewed anyone that I thought might have any use for soya bean flour.

At no time when the Kaseno Products Co. was ordering this flour from us did they explain to us the method or manner in which they used it. We were never familiar with the proc- [172] ess by which they manufactured any adhesive that they might manufacture. We never had any discussion with them about the manner in which they used it.

I had a conversation with Mr. Laucks on February 28, 1928. We were anxious to sell Mr. Laucks soya bean flour. We had been sending samples to them and writing letters for a long period of time, and had had people get in touch with him, but we were never able to sell him. On this date I went to Mr. Laucks' office at his request. He asked me what our product was and I explained it to him.

(Testimony of Wilmot H. Lilly.)

He gave us an order for four and one-half tons of one kind and one-half ton of another material. I explained to Mr. Laucks the kind of cake or material our flour was made out of and the fineness of it, 100 mesh or better. He remarked that the price was rather high but that he would try it out. That is all that was said, as I recall. We sent it up and got word back that the flour was satisfactory and then there were other orders placed with us right along, for various quantities—5 tons, 20 tons and 10 tons.

I had a further conversation with Mr. Laucks on April 19, 1928, in Mr. Laucks' office. No one else was present at that time. We discussed a contract. Mr. Laucks wanted to know how much flour we could manufacture, and I told him eight tons per day. We talked about a contract to supply that number of tons per day for a year. I told him we would be very pleased to get that contract. Mr. Laucks remarked that that would be our full capacity; and I answered that it would. He said we would not be able to sell to anyone else. I answered that we would be able to so sell,—that we would immediately put in more machinery if we got that contract. Mr. Laucks said he [173] would not give us the order on that basis. We didn't get the order. They had entered this lawsuit against us just about one week before the time I was up there. The conversation took place after the first case had been served on us. It was part of the proposed

(Testimony of Wilmot H. Lilly.)

contract that he would drop suit if we accepted the contract.

Neither Mr. Laucks nor anyone connected with I. F. Laucks ever notified us that they claimed the Kaseno Products Co. was infringing any patent held by them, prior to the institution of these actions. That matter was never discussed by them. We did not know that the Kaseno Products Co. was violating any right of I. F. Laucks. We first learned that they were making such claim when we were served with the Laucks' suit. That was the first notice we had ever been given.

There are a number of concerns in the City of Seattle manufacturing soya bean flour for glue purposes. Among them are: Fisher Flouring Mills, Albers Bros. Milling Company, and the Soya Millers, Inc. The Soya Millers, Inc., started in 1928. I am pretty sure the Fisher Flouring Mills were manufacturing during the war. They were manufacturing flour, and I don't know when they started to manufacture for glue purposes.

When we delivered the soya bean flour about which I have testified, we never at any time had any knowledge as to the manner in which Kaseno Products Co. was using it. We were simply filling orders that came to us in the regular course of business.

(Testimony of Wilmot H. Lilly.)

Cross-examination.

I knew that the Kaseno Products Company was using this flour to manufacture glue. We didn't know that, however, when [174] they first started in. They were manufacturing earwig bait and a lot of things. When we would get an order for soya bean or soya bean flour, we didn't know at that time anything about what they were doing. I presume in 1927 we knew they were using it to make glue. I never had any official notice of it, but I think they had a sign "Glue" on their building. We knew at that time that soya bean flour was used for glue. From 1927 up to the present time, we had no other larger single customer for soya bean flour of 100 mesh or better than the Kaseno Products Co. We have tried to sell our flour to anybody that would buy it, and pay for it. We directly solicited manufacturers of adhesives to use our flour for glue-making purposes.

I may have discussed with Mr. Laucks in 1928 that we had been advised that certain of the veneer plants were going to make their own glues, and that we were desirous of selling soya bean flour to them for that purpose. I don't know that I told Mr. Laucks we had sent samples to them. We had sent such samples, though. I presume the furniture company in Grand Rapids, Michigan, to which we have sent soya bean flour, used it in making glue.

(Testimony of Wilmot H. Lilly.)

We are selling soya bean flour to the Perkins Glue Company in Pennsylvania, and I assume they are making glue out of it. We have not sold them lately, but we did sell them prior and subsequent to February, 1928. We have sold soya bean flour to the Hercules Glue Company, and the Henning Manufacturing Company of Saginaw, Michigan, both of which are manufacturers of adhesives. We are still selling soya bean flour to this concern in Saginaw, Michigan, for glue-making purposes. Sometimes we sell them a carload and sometimes a ton per month. Whenever [175] they order it, we ship it. They do not use a great deal of it, but they have bought carloads at times and sometimes a ton. We have sold the Perkins Company by the carload and also by the ton. We sold them prior to 1928 and have sold them some since 1928. The Hercules Company and all those customers that buy soya bean flour are about the same. They order quantities at times and then do not order for some time. Then they write or wire to ship them some more, quick. That has continued up to the present time.

I did not know that I. F. Laucks, Inc., owned patents covering the manufacture of glue from soya bean flour. I never heard of it before this lawsuit was commenced. Most of the soya bean flour we have sold since 1927 went into glue plants; that is, glue manufacturing concerns. Business has not been so good in 1931.

(Testimony of Wilmot H. Lilly.)

Redirect Examination.

Neither myself nor the Chas. H. Lilly Co. have had any connection whatsoever with either Mr. Linquist or the Kaseno Products Company, other than selling them flour, just the same as any other customer. We were interested in selling what we manufactured. We have no financial interest whatsoever in the Kaseno Products Co., and never had any such interest. We have never had anything to do with the management or control of the business of that company. Neither myself nor any member of the Chas. H. Lilly Co. has ever in any manner superintended or suggested the use of this particular flour by the Kaseno Products Co. We have never suggested or recommended to any glue manufacturer the particular manner in which this flour should be used in the manufacture of any adhesive. We have never sug- [176] gested any commercial product or material of any kind which was suitable for use with the soya bean in manufacturing adhesives. We have never at any time had any knowledge of any particular material or chemical which might be combined with the soya bean flour in adhesives. I don't know anything about that. I have never had anything to do with that.

Recross-examination.

I am the president and general manager of the Chas. H. Lilly Co. and have been such since 1927

(Testimony of Wilmot H. Lilly.)

or 1928. As our business increased, we put in the necessary equipment to handle it. Most of our sales went for glue making purposes.

"Q. You say that your average milling of soya bean flour, 100 mesh or better, has averaged 150 tons per month?

A. Yes; in that neighborhood.

Q. And that has continued since, an average for the years 1926, 1927, 1928 and 1929?

A. Oh, I would say beginning in 1927. I do not think it averaged anything like that in 1926."

TESTIMONY OF S. E. VICTOR,
Recalled for Defendants.

S. E. Victor, recalled as a witness on behalf of the defendants, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

My name is S. E. Victor. As purchasing agent for the Chas. H. Lilly Co., I ordinarily handle the orders for soya bean flour and put the orders through. I have been connected with the Chas. H. Lilly Co. since July 25, 1922. I am familiar with the sales of soya bean flour during the past five or six years. During that time there has been a standard price [177] established for soya bean flour from time to time just as with any other merchandise. The price is governed by the buying price and the cost of manufacture; and we set a standard price on it from time to time. The price is not determined or affected in any way by the party to whom we are selling. It is just like selling whole wheat flour or any other product that we sell. We have a standard price on it to one and all. We have sold I. F. Laucks and the Kaseno Products Co. on the same day. The price was identical to both parties. Anyone else who ordered soya bean flour from us would get identically the same price. There is no discrimination. We have never favored the Kaseno Products Co. with any special price lower than the standard market price.

TESTIMONY OF I. F. LAUCKS
for Plaintiff.

I. F. Laucks, called by the plaintiff, in rebuttal on further direct examination, testified in part, other portions of the testimony of the witness not being set forth, as follows, referring to the Johnson patent in suit:

Direct Examination.

The essential element of the Johnson patent, Exhibit No. 1, which I would deem as a discovery is that Johnson taught and discovered a new glue base,—the tacky substance of the soya bean.

All of the prior art previous to Johnson had taught to isolate the protein and throw all the rest of this stuff away, get rid of fibers, purify the protein.

The prior art taught to get rid of the non-protein matter, the fibers.

Dr. Sato's testimony that he tried very often to get a [178] waterproof glue using soya bean meal but finally reached the conclusion that he must destroy the fibrous character of the cellulose remaining, is in keeping with the teachings of the prior art as of 1922. I could go on and name some other prior art of the same nature. There is the article of Dr. Oskar Nagel quoted extensively, regarding the entire isolation of proteins and purifying them and then using them. There is the Scientific American Supplement article which was cited. That was another teaching of the same sort. Piper &

(Testimony of I. F. Laucks.)

Morse were cited, and they only take isolated proteins. The O'Gorman patent teaches that the protein should be isolated and all impurities carefully removed. None of the prior art previous to the teaching of the Johnson patent, Exhibit No. 1, would have taught the use of fibrous materials as an adhesive base. All of the prior art taught to discard these materials and get rid of them, to carefully purify them out, throw them away.

"Q. In lines 59 to 63 the patentee says as follows, 'I have found in practice that by using this tacky substance I can produce a very cheap adhesive, and one that is far better than any that has been made by heretofore known formulas.'

What comment have you to make on those lines?

A. Well, I would say that Johnson was emphasizing there the quality, as he considered, of his adhesive, as compared to its cost. As a matter of fact, it has been found in practice that Johnson's base does make the best adhesive, the best glue for fir panels in this Pacific Coast business. It makes a waterproof glue, a veneer glue, that is superior in water-resistant qualities to anything that was heretofore known, as far as that is concerned. And when the cost of it is considered it is very far superior.

(Testimony of I. F. Laucks.)

Here was a man, he took a waste product—there had been no use for it whatsoever before except for manure and fertilizer and cattle food—he took that waste product and converted it [179] into something that was very much more useful than those things it had been used for before, and he certainly was justified in calling the attention of the public to the saving that he was making for the public. That is the way I interpret those lines.

Q. Were there any chemically isolated soya bean proteins on the market as commercial products in 1922?

A. No, sir; and I have never seen any isolated proteins on the market at any time. There have been isolated proteins produced for special purposes, but as a marketable commodity they were not."

* * * * * * *

"Q. What next does the patentee teach is to be done with this tacky substance?

A. He then gives a formula for making it into an adhesive.

Q. How?

A. He says he may compound the tacky substance with various other agents which may be those commonly used in the manufacture of adhesives, such as hydrated lime and sodium fluoride, the tacky substance and the two agents named being mixed in solution.

(Testimony of I. F. Laucks.)

> The important part of that, I would say, was the phrase 'other agents' which may be those commonly used in the manufacture of adhesives, such as hydrated lime and sodium fluoride.
>
> Now, the only adhesive that used lime and sodium fluoride at Johnson's time, 1922, was casein. Therefore, I can only interpret his word 'adhesives' there to mean the casein art. He says 'commonly used in the adhesives', and no other adhesives used lime and sodium fluoride.''

There are other combinations of chemicals besides sodium fluoride and lime which with soya bean flour and water will produce adhesives. Adhesives may be produced by most of the double decomposition combinations, lime and carbonate, lime and phosphate, lime and most any of the alkaline salts. They will all produce adhesives with soya bean flour and water, but there are only a few of them that will produce a veneer glue. [180]

Claim 3 of the Johnson patent, Exhibit No. 1, is for an adhesive composition comprising the tacky substance of the soya bean, hydrated lime and sodium fluoride. He narrows down to the specific elements which he has named in the specifications.

Referring to Plaintiff's Exhibit No. 86, to what is designated on that chart as BF3-LS in the fourth line, the raw material in that glue is standard soya

(Testimony of I. F. Laucks.)

bean flour. The chemicals used with that adhesive base are caustic soda, lime, carbon bisulphide and water. The resultant dry strength is 348 pounds. The resultant wet strength is 148 pounds. Fibers are present in this glue.

Referring to what is designated BP-LS in the fourth line under "isolated soya bean protein" on the chart, Plaintiff's Exhibit No. 86, the raw material there used is isolated soya bean protein. The chemicals used with that are just the same chemicals as used with BF3-LS, except that I would not be sure of the water. The water is not shown on this chart but the lime, caustic and carbon bisulphide are the same. The wet strength there is 140 pounds. You get the same thing on the refined soya bean protein here. The addition of carbon bisulphide with no other change at all makes a difference of from 51 to 126 pounds in water resistance. There is no fiber in this refined soya bean protein shown on the chart. That was refined carefully to remove all of the fiber.

By "pounds of water resistance" I mean, strictly, the pull test of a sample. A test piece of plywood is put in water for 48 hours. It is notched before being put in water so that the water attacks the glue line on all four sides. After that 48 hour immersion it is put in the machine and the pounds that [181] it takes to pull the plywood apart are measured, and that is what we mean by these wet tests, in other words, water resistance. The pull

(Testimony of I. F. Laucks.)

on the machine is not a twisting pull. It is just as straight a pull as we can make it mechanically. The method I have just described is the standard method of making such tests.

While I do not take any responsibility for the work of this committee which made the tests depicted on Plaintiff's Exhibit No. 86 because the members of the committee were all experts and they had nothing to do with my organization, nevertheless I do not have to go to the committee's finding to know exactly the same thing that I have testified to, because I have seen it time and time again from our own experiments, our own work, and in our own experience over eight years' time. We did not add anything to our knowledge by the work of this committee.

In our caustic soda patent, Exhibit No. 14, there are no claims touching the use of isolated vegetable protein in glue compounds. Caustic soda as such has no peculiar action on isolated proteins.

By an isolated vegetable protein I mean a protein which has been isolated by chemical means from the other matters of the seeds or meals in which it is found. Practically the only way of doing that is by precipitation with acid from some solution, and then either purifying or not purifying the resultant product.

Isolated protein does not contain all of the colloidal constituents of seed flour. It contains none but the protein and whatever amount of impurities

(Testimony of I. F. Laucks.)

are carried along with the [182] protein if it is not purified to the highest degree. The non-proteinous constituents of the soya bean are the fibrous materials, cellulose, hemicellulose, the sugars, the gums and the oils.

Our first glue was made in 1923 with caustic soda as such, and for a year or so we tried to introduce that glue. Along in 1925 we put out a ready mixed glue and we worked for a year or so trying to introduce ready mixed glues. After a struggle of a year or so we went back to caustic soda. That is what I mean by the reintroduction of caustic soda along in the latter part of 1926 or early 1927. A ready mixed glue is a double decomposition glue with which nothing has to be added at the plant except water. We did not put out a double decomposition glue until 1925. Johnson teaches only a double decomposition glue made from soya bean meal or flour.

> "Q. Wherein do vegetable seed flours differ from isolated proteins, as respects their use in glue?
>
> A. Well, the first difference that occurs to me is from the practical standpoint. Vegetable seed flours are used all over as practical glues; isolated proteins are not. In fact, in my opinion, they have properties that would bar them from being used as practical glue."

* * * * * * * * * *

(Testimony of I. F. Laucks.)

"Q. What would you say as to the water requirement of an isolated soya bean protein for glue purposes?

A. Isolated proteins in general have such high water requirements that they are not so good for glues. They are beyond the range of what is tolerated in all glue for water requirement. I think one of these charts—it is contained in one of these charts, I believe. Exhibit 85 shows that. Exhibit 85 shows the water requirements to give spreadable viscosities, up as high as 7.3 parts of water. When adhesion was finally obtained, then the water requirement was so high that it was beyond the glue range. [183]

Down at the low water requirements there was no adhesion. That is, I mean the water requirements that were within the glue range did not give adhesion. When you get adhesion, then your water requirement gets beyond your glue range.

Q. Are the properties of the isolated protein the same as those of the protein as it exists in the seed?

A. No. As I have testified before, that is due to the change that takes place in isolation."

* * * * * * * * * *

"Q. Do you know of any isolated vegetable protein ever having been used practically for glue?

(Testimony of I. F. Laucks.)

A. No, sir; I do not."

* * * * * * * * * *

"Q. Are isolated vegetable proteins easy to obtain, commercially?

A. They are not articles of commerce at all. You cannot buy them on the market."

* * * * * * * * * *

"Q. Can you compare soya bean isolated protein with soya bean flour itself as a practical glue base, or as being used for glue?

A. I testified before as to the water requirement. The water requirement of isolated protein is not within the range permitted for glue. The thinning tendency of isolated proteins is bad, and the purer you get them the greater the thinning tendency becomes. That thinning tendency renders them unfit for glue. A glue mixer, I mean a man mixing glue in a plant, could not mix a mass which had the thinning tendency, unless that was absolutely uniform, one sack after another, so that he could add the right amount of water and no more. And as far as the cost is concerned, it is not practicable from the standpoint of cost."

* * * * * * * * * *

"Q. Have any of the ingredients of vegetable seed residue flours, to your knowledge, been used as adhesive bases prior to the Johnson patent, Exhibit No. 1?

(Testimony of I. F. Laucks.)

A. If by 'used' you mean used in practice—[184]

Q. Commercially.

A. Commercially, no, they have not.

Q. Do you mean to say that vegetable seed protein had never been used as a glue base?

A. That is exactly what I mean to say, not used practically. It has been suggested in patents.

Q. I beg your pardon?

A. They have been suggested in patents, but they have not been used commercially."

The teaching and element of discovery in the caustic soda patent, Exhibit No. 14, is that a much better glue is obtained by the use of the particular chemical, caustic soda as such, in an aqueous medium with seed residue flours of considerable protein content. The essential element of discovery contained in the carbon bisulphide patent, Exhibit No. 24, is that this patent teaches the increase in water resistance of an adhesive by the use of carbon bisulphide or its equivalent in an alkaline aqueous medium, the adhesives containing vegetable protein matter.

Cross-examination.

Plaintiff is the owner of United States Patent No. 1,680,264, issued to Otis Johnson, covering a process of treating soya beans. The patent covers a particular process of chemically isolating the pro-

(Testimony of I. F. Laucks.)
tein from soya beans for use as a base for an adhesive. The patent sets out the steps to be followed in obtaining the isolated protein. The patentee says that the process may be carried on commercially with dispatch and at small cost. I think he was probably a little enthusiastic about all that treatment when he said "at small cost." I do not believe it could be done at small cost and with dispatch. [185]

Our exhibits show that panels made up from soya bean flour, caustic soda and water, assuming the right proportions were used, have a wet strength of about forty pounds, somewhere around there.

TESTIMONY OF I. F. LAUCKS
for Defendants.

I. F. Laucks, called by defendants as an adverse witness, on direct examination, testified in part, other portions of the testimony of the witness not being set forth, as follows, reference being had to the Caustic Soda patent in suit:

Direct Examination.

"Q. I refer you to the paragraph beginning with line 95 on the first page, 'When the usual chemicals employed in making casein glue, viz., lime and sodium silicate, are added to a vegetable protein-containing material, for example,

(Testimony of I. F. Laucks.)

soya bean flour, a glue results, but it is not as good as casein glue. It is not as highly water resistant nor as workable. We find, however, by the use of caustic soda with such vegetable protein-containing matter, a much better glue is obtained, such caustic soda apparently playing the part of dispersing the colloidal material.'

Now, did you mean by that paragraph to convey the idea that caustic soda was not the usual chemical employed in making casein glue?

A. Well, I would say by that paragraph we were attempting to describe some of our experiences. We say 'The usual chemicals employed in making casein glue,' which were lime and sodium silicate. We thought at the time that all we had to do was to take lime and sodium silicate, maybe, and put them on soya bean flour, but we were sadly disappointed; it did not work that way; it did not make anything.

Q. Where did you find out that lime with sodium silicate were the usual chemicals employed in making casein glue?

A. I saw the various veneer plants that were making glue out of casein using lime and silicate, and the so-called government formulas that have been testified to here.''

* * * * * * * [186]

(Testimony of I. F. Laucks.)

"Q. Is sodium fluoride a mild alkali?

A. Sodium fluoride is practically a neutral alkali, I believe. It is a salt, you understand, and it is not of the class of salts which are weak, which have weak acids in connection with the sodium. Hydrofluoric acid is an acid of considerable strength, so that the properties of the union of sodium and the acid, which union forms the salt, the acidic and the basic properties are properly balanced, so that you have practically a neutral salt. You really couldn't call it a mild alkali at all.

Q. Well, what are mild alkalis, some of them?

A. Well, mild alkalis would be alkalis like baking soda, for instance, sodium phosphate, sodium carbonate, perhaps — although that is getting a little bit strong—sodium acetate, perhaps, and so on.

Q. What would sodium silicate be?

A. Sodium silicate, it depends on what kind of sodium silicate you are talking about there. There are a number of different sodium silicates. In some of them they have an excess of alkali, and are not, therefore, mild. In others the alkali and the acid is practically balanced, and they would be called—I do not mean balanced in the sense of being of equal

(Testimony of I. F. Laucks.)

strength, but balanced in proportion — they would be called mild.

Q. I think you said sodium carbonate was a mild alkali, as distinguished from caustic alkali.

A. Certainly as distinguished from caustic soda it would be called mild.

Q. Would sodium silicate be called mild as distinguished from caustic soda?

A. Yes.

Q. And fluoride?

A. Fluoride would be milder than any of those that you have named."

TESTIMONY OF DR. HENRY V. DUNHAM
for Plaintiff.

Dr. Henry V. Dunham, called as a witness on behalf of the plaintiff, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows: [187]

Direct Examination.

"Q. Have you for yourself, or have your companies made any attempt to make plywood glues out of isolated protein of soya bean flour, or vegetable seed residue flours — chemically isolated protein of soya bean flour, or chemically isolated protein of vegetable seed residue flours?

(Testimony of Dr. Henry V. Dunham.)

A. Only in a very small laboratory way. We never tried to do it commercially.

Q. What were the results of such tests or experiments?

A. As regards what?

Q. For the making of a wood glue.

A. They were not at all satisfactory. The isolated proteins, in the first place, they were difficult to disperse, at least, ours were—and they require on the start too much water, and they seem to hydrolize very quickly and come too thin, and lack strength. Our own experience has been that they are not at all satisfactory, up to date.

Q. By the term 'isolated proteins' in your answer were you referring to chemically isolated proteins?

A. Yes.

Q. Is the chemically isolated protein itself easy or difficult to obtain, that is, from seed residue flours?

A. I think it is very difficult to obtain, as far as I know. You mean to obtain by manufacturing it yourself?

Q. Yes.

A. It is very difficult to obtain. That is, it is expensive to get it out, in my judgment, judging from the work that we did at our laboratory.

(Testimony of Dr. Henry V. Dunham.)

Q. Do you know of any concern in the world that is producing isolated vegetable proteins in commercial quantities, so that they can be bought?

A. No; I don't know."

Up to 1922 and 1923 the literature taught the use of isolated or purified protein for glue purposes. [188]

TESTIMONY OF CHARLES N. CONE
for Plaintiff.

Charles N. Cone, called as a witness on behalf of the plaintiff, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

"Q. Have you in your wide experience in the glue art, and in your visits to commercial plants throughout the United States, ever heard of or seen the use of an isolated vegetable protein for glue making purposes?

A. I never have."

* * * * * * * * * *

"Q. What do you regard as the distinguishing characteristic of seed residue flours as compared with other glue bases?

A. I would say that seed residue flour is distinguished very markedly from all formerly adhesive bases, first, in that it is a combination

(Testimony of Charles N. Cone.)

of a number of different types of colloidal material, whereas, all previously used glue bases were more or less pure substances. Starch is very pure; casein quite pure, and animal glue the same.

Not only that, but these various colloidal constituents—no one of these various colloidal constituents of soya bean flour had ever previously been used as a glue base.

Q. Take, for instance, soya bean meal from which the soya bean flour is ground into a glue base, ground for use as a glue base, state to the court whether that meal is or is not a waste product of soya bean?

A. It is a waste product and was until its use for glue was discovered. I believe it was used chiefly as a fertilizer and as stock feed. I would say that soya bean flour is distinguished further from previously used glue bases in that no one of its constituents can be used satisfactorily alone. It is only the combination of these various elements, as they are found in this waste material that will work; and really the most remarkable thing is that even though it has the property of being a good glue base, [189] that that property should ever have been discovered because of that fact that if you do make it up into a glue it does not look like glue, it has none of the properties that are ordinarily attributed to a glue."

* * * * * * * * * *

(Testimony of Charles N. Cone.)

"A. Well, I explained some experiments that I made from those—I am inclined to believe that they help create this stability that I have spoken about that the soya bean flour glue has that the isolated protein glue does not have. And another important function that I am quite sure of is it modifies the consistency and the handling properties of soya bean flour. I think that fiber is very largely responsible for the lack of adhesive appearance, which from a psychological standpoint is a detriment so far as the prospective customer is concerned, but from an actual practical standpoint is really of benefit.

The COURT.—Like bricks without straw?

A. Yes.

Q. How do you account for the fact that sodium carbonate, as you testified a while ago dispersed with soya bean flour will not make a good glue, and on the other hand you testified that caustic soda as such did make a good glue? Now, why?

A. Well, it is somewhat hard to—I might say it is impossible to give an absolute scientific proof of what you may think about these things. But we have in both cases a substance which—that is, both caustic soda and sodium carbonate dissolve the protein part of the glue, so it seems quite reasonable to me to say that it is due to the beneficial result that the caustic

(Testimony of Charles N. Cone.)

soda has on the other constituents of the soya bean flour, the fibrous material and the other constituents."

* * * * * * * * * *

"Q. In theory and from analogy with any other known adhesive bases, should not the isolated protein of seed residue flours give you a better glue than seed residue flours themselves?

A. From a theoretical standpoint, reasoning as one skilled in the glue art and not knowing anything about soya bean flour as compared to isolated protein, I should say that from that standpoint it would seem obvious that the isolated protein would make a far superior glue. [190]

Q. In practice have you found that true?

A. No, it is the other way around.

Q. Is there any instance that you know of where the isolated protein of seed residue flour has been used or is now being used in the commercial glue art?

A. I do not know of any such instance.

I might say that we were some affected by the theoretical expression that I have set forth there relative to isolated protein and that we have done a great amount of work on isolated protein, attempting to make an isolated protein glue that would be satisfactory.

(Testimony of Charles N. Cone.)

> We have made up in our laboratory over seven hundred batches of experiment glue with isolated proteins and failed absolutely to find any formula of any isolated protein that would make satisfactory glue."

The prior art previous to the Johnson patent generally taught the use of isolated proteins for glue bases.

TESTIMONY OF E. SUTERMEISTER
for Plaintiff.

E. Sutermeister, called as an expert witness on behalf of plaintiff, testified in part on direct examination, other portions of the testimony of the witness not being set forth, as follows:

Direct Examination.

The chart headed "Effect of CS_2" is a chart depicting the effect of carbon bisulphide on glues made from different adhesive bases, namely, seed meal glues, isolated protein glues and casein glues.

(The chart identified by the witness was offered in evidence and over the objection of defendants' counsel was received in evidence and marked Plaintiff's Exhibit No. 86.)

Plaintiff's Exhibit No. 86 depicts the results of certain tests made by a committee of experts consisting of Dr. L. [191] Bradshaw, Dr. B. B. Coyne, Dr. H. V. Dunham and myself. All tests

(Testimony of E. Sutermeister.)

were made under the closest supervision in the laboratories of I. F. Laucks, Inc. The committee was seated on a raised platform so located that all operations, from the weighing out of samples through the mixing of the glues, to the very application to the panels, were in full view at all times. All samples of the adhesive bases (flours, proteins, etc.) were first identified by some person who was familiar with their preparation or otherwise qualified to vouch for their authenticity. After the glues were mixed they were applied to Douglas fir panels 5x10 inches. For the outer plys the grain ran the five inch way, while for the inner ply it was in the ten inch direction. Each panel was three-ply and twelve panels were made with each glue. The glue was applied by running the center piece or core through a pair of corrugated rolls to which the glue was applied by tipping it up on one end of the core and running the core and glue through the rolls together. This glued both sides of the core which was then placed between two of the other pieces of veneer. The glue was applied ten minutes after its removal from the mixer and ten minutes after the twelve panels had been glued up they were placed together in the press and the pressure brought up to 125 pounds per square inch. The clamps holding the panels were then tightened up and the pressure maintained over night. The panels were then removed, sawed to a size of 3x8 inches, stacked

(Testimony of E. Sutermeister.)

up and allowed to dry at room temperature for five days.

The pieces for the wet tests were soaked in water at room temperature for 48 hours before making the test. During this time the samples were locked into the container with a [192] padlock purchased by myself and I retained both keys until the tests were completed. There was therefore no possibility of tampering with the samples during the soaking period.

All tests, both dry and wet, were made on a standard type of machine which was designed to show the force required in pounds per square inch necessary to break the samples. The sawing of the samples and all strength tests were supervised by me personally.

Tests made as shown by Exhibit 86, using standard soya bean flour as an adhesive base, showed the following:

> Panels glued with this adhesive base with which was mixed 8 pounds of caustic soda and water, had a dry strength of 319 pounds per square inch, and a wet strength of 15 pounds per square inch.
>
> Panels glued with this same adhesive base plus 2.58 pounds of carbon bisulphide, had a dry strength of 341 pounds per square inch, and a wet strength of 74 pounds per square inch.

(Testimony of E. Sutermeister.)

Panels made from glue comprised of standard soya bean flour, caustic soda and lime had a dry strength of 374 pounds per square inch, and a wet strength of 38 pounds per square inch.

Panels glued from this last mentioned adhesive base to which had been added 2.58 pounds of carbon bisulphide had a dry strength of 348 pounds per square inch and a wet strength of 148 pounds per square inch.

Tests made as shown by Exhibit 86, using isolated soya bean protein as an adhesive base showed the following: [193]

Panels glued with isolated protein to which caustic soda had been added, had a dry strength of 317 pounds per square inch, and a wet strength of 61 pounds per square inch.

Panels made with this last mentioned glue, to which had been added 2.58 pounds of carbon bisulphide, had a dry strength of 350 pounds per square inch and a wet strength of 137 pounds per square inch.

Panels made with a glue comprised of isolated soya bean protein, caustic soda and lime had a dry strength of 363 pounds per square inch and a wet strength of 83 pounds per square inch.

Panels made with this last mentioned glue to which 2.58 pounds of carbon bisulphide had

(Testimony of E. Sutermeister.)

been added showed a dry strength of 357 pounds per square inch and a wet strength of 140 pounds per square inch.

Panels glued with a glue comprised of refined soya bean protein and caustic soda had a dry strength of 308 pounds per square inch and a wet strength of 51 pounds per square inch.

Panels made with this last mentioned glue, to which 2.58 pounds of carbon bisulphide had been added, showed a dry strength of 355 pounds per square inch and a wet strength of 126 pounds per square inch.

(Plaintiff's Exhibit No. 85 was offered in evidence and over the objection of defendants' counsel was received in evidence.) Exhibit 85 shows the effect of varying the amount of caustic soda on wet precipitated soya bean protein. In all of the tests made as depicted on Exhibit 85 the adhesive base used [194] was wet soya bean protein curd. When 1 pound of caustic soda was added to this adhesive base the panels made therefrom showed a dry strength of 200 pounds per square inch. When 2 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 178 pounds per square inch. When 3 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 198 pounds. When 4 pounds of caustic

(Testimony of E. Sutermeister.)
soda were added to this adhesive base the panels made therefrom showed a dry strength of 162 pounds per square inch. When 5 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 217 pounds per square inch. When 6 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 217 pounds per square inch. When 7 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 311 pounds, and a wet strength of 30 pounds per square inch. When 8 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 312 pounds and a wet strength of 43 pounds per square inch. When 10 pounds of caustic soda were added to this adhesive base the panels made therefrom showed a dry strength of 383 pounds and a wet strength of 88 pounds per square inch.

TESTIMONY OF DR. HERMAN V. TARTAR for Plaintiff.

Dr. Herman V. Tartar, called as a chemical expert witness on behalf of plaintiff, testified in part, other portions of the testimony of the witness not being set forth, as follows:

(Testimony of Dr. Herman V. Tartar.)

Direct Examination.

I am a professor of physical chemistry at the University [195] of Washington. I have made a study of colloid chemistry. Glue is a colloid. By the term "glue" as here used I am referring to a material which when put with water might form an adhesive material. The following experiments were made by me for the purpose of showing the effect of carbon bisulphide as to water resistance with its use with isolated protein of soya bean.

I made glue tests last September with isolated soya bean protein, using the following chemicals: Water, caustic soda and carbon bisulphide in glue requirements. I used purified protein from soya bean flour. I mixed this up as glue in a regular glue mixer. I then spread the glue on panels and let the panels stay in clamps over night. Five days later the panels were tested. The test showed a dry breaking strength of 302 pounds per square inch, and a wet test, that is, after soaking 48 hours, of 118 pounds per square inch. This experiment I designated RPSA.

I made another experiment which I designated RPA. In this experiment I took exactly the same protein that I used in RPSA and added water and caustic soda in proportions precisely the same as in RPSA. No carbon bisulphide was added, however. I took exactly the same steps as those taken in experiment RPSA. I spread this substance as

(Testimony of Dr. Herman V. Tartar.)

glue on panels, put the panels in clamps for the same length of time as in the previous experiment, and after five days made wet and dry tests. The dry test showed a strength of 255 pounds per square inch; the wet test showed a strength of 53 pounds per square inch.

I made twelve tests in all and the strengths given are the average of these twelve tests. [196]

In both of the above mentioned tests my adhesive base was isolated soya bean protein. An analysis made of the protein showed that there were no fibers present. Caustic soda was added in the proportion of 8 pounds of caustic soda to 100 pounds of dry adhesive base. To this was added water to the extent of 300 parts of water to 100 pounds of dry adhesive base.

Cross-examination.

I carried the experiments out as Mr. Laucks desired them carried out. I am representing here this thing, that is this experiment that I carried out. I am testifying in this experiment as to just what I did. I haven't worked in intimate contact with the soya bean industry. I haven't had any wide experience in working with glue, just simply making tests with glue. I am not an expert on glue. As to the experience I have had they were simply tests as to adhesiveness. I have not had any practical experience in making glue or making plywood.

(Testimony of Dr. Herman V. Tartar.)

I once made some experiments sixteen or seventeen years ago and I have had little experience since that time, excepting I have tested adhesiveness with colloids at times. In the experiments to which I have testified in this case I have followed the instructions which Mr. Laucks had given me with regard to these experiments. My function is to show to you and to the court certain experimental facts. I set out to establish these by experimental methods, starting with certain materials and ending with certain materials. These experiments were definitely planned. We knew what we were driving at and what we were establishing. The materials were not out of my possession and I tested every chemical that went into it and I am here to testify that those facts are true. All of the materials that were used [197] were suggested to me by Mr. Laucks as well as the amount of such material. The gluing of the panels to which I have testified were done in Mr. Laucks' laboratory and in my presence.

Redirect Examination.

"Q. Is viscose a sulphur derivative of carbonic acid?

A. Viscose is a cellulose xanthate, and the xanthates are derivatives of carbonic acid; they are sulphur derivatives of carbonic acid. Therefore I should say that viscose is a sulphur derivative of carbonic acid."

TESTIMONY OF DAVIS M. WOOD
for Defendants.

Davis M. Wood, called as a witness on behalf of the defendants, testified in part on direct examination, other portions of the testimony of the witness not being set forth, reference being had to the Johnson patent in suit, as follows:

Direct Examination.

"Q. Now, read the following paragraph and state what he meant by that.

Mr. OGDEN.—Refer to the lines.

A. Line 25.

'In carrying out the invention, soya beans are first pressed, or otherwise treated to extract their oily content and the resultant pressed cake is either finely ground, when the whole of the residue is to be used. Or else it is treated to extract the adhesive constituent when the high grade adhesive is to be produced. This adhesive constituent, or even the finely ground pressed cake, may be considered as a base for my formula and the same, on account of its adhesive qualities, I will term a tacky substance. I compound the tacky substance with various other agents which may be those commonly used in the manufacture of adhesives.'

Just right there, explain to the court what Johnson meant by referring to agents commonly known mixed with his base? [198]

(Testimony of Davis M. Wood.)

A. He refers there to agents very commonly and ordinarily used in the manufacture of adhesives, the principal adhesive at the time being casein, and the reagents in common use with casein being lime, sodium fluoride, sodium silicate, caustic soda and similar materials.

Q. Follow up where you left off.

A. 'Such as hydrated lime and sodium fluoride, the tacky substance and the two agents named being mixed in solution. I, of course, do not confine myself to hydrated lime and sodium fluoride, as other agents having substantially the same characteristic qualities will be sufficient.'

Q. State to the court what other agents would have the characteristics of sodium fluoride and lime?

A. Any chemical which would have the property of reacting alkaline in an aqueous medium, that is, in water; that is, any agent that is soluble in water and that would react alkaline in this water would have the same or similar properties as sodium fluoride, and any chemical having the properties similar to lime, that is, forming insoluble or very slowly soluble compounds with his constituent of soya bean—that is, protein—would be the equivalents of lime.''

* * * * * * * * * *

(Testimony of Davis M. Wood.)

"Q. Now, explain to the court the difference between lime and hydrated lime?

A. Well, hydrated lime is usually spoken of, commercially as lime. Really, lime is calcium oxide, and the hydrated lime is calcium oxide that has been treated with water."

* * * * * * * * * *

"Q. With reference to defendants' Exhibit A-95, what chemicals are shown as being used therein?

A. Trisodium phosphate, borax, sodium carbonate and other alkaline bodies are shown here.

Q. Will you relate that to the plaintiff's patents.

A. The trisodium phosphate, borax and sodium carbonate are salts of strong bases with weak acids, and have an alkaline reaction in an aqueous medium. They correspond to the salts of strong bases and weak acids as shown in the carbon bisulphide patent, and such a classification would include the sodium fluoride used by Johnson." [199]

* * * * * * * * * *

"Q. Now, refer to the liquefying agent, Johnson reissue, Claim 1.

A. An alkali metal liquefying agent would be any salt or sodium or potassium which would react alkaline in an aqueous solution, such as

(Testimony of Davis M. Wood.)

sodium fluoride, sodium phosphate, sodium silicate, sodium borate, sodium carbonate, sodium sulphide and sodium sulphite, sodium oxalate. (This last used by Knorr as a substitute for disodium phosphate.)"

* * * * * * * * * *

"Q. I asked you if sodium fluoride would come under the classification of salts of weak acids, chemically?

A. Yes, it does.

Q. It is a compound which reacts alkali in solution?

A. Yes, sir."

JAY C. ALLEN,
WELDON G. BETTENS,
Attorneys for Defendants,
The Chas. H. Lilly Co.
and Wilmot H. Lilly.

The foregoing narrative statement of the evidence is hereby allowed and approved, and the same is hereby ordered filed as a statement of the evidence to be included in the record on Appeal in the above entitled cause, as provided by Paragraph (b) of Equity Rule 75. The evidence appearing in the form of questions and answers in the exact words of the witnesses has been so set forth in accordance with the plaintiff-appellee's desire by the direction of the court, under Equity Rule 75 (b) as amended,

in view of the same being expert testimony for the most part, and where not expert testimony, such form is necessary in view of the nature and character of the testimony.

Dated this 25th day of January, 1933.

EDWARD E. CUSHMAN,
Judge.

[Endorsed]: Filed Jan. 26, 1933. Ed. M. Lakin, Clerk. [200]

[Title of Court and Cause.]

EXCEPTIONS AND OBJECTIONS TO COST BILL.

The Chas. H. Lilly Co., and Wilmot H. Lilly, defendants herein, except and object to the cost bill served herein by the plaintiff and move to strike the same upon the ground and for the reason that under Section 4922, Revised Statutes, the plaintiff is not entitled to costs herein, and further because under the decision of the court the question of costs is to be heard at the time of "settling the decree."

II.

Should the foregoing objections be overruled or denied, then the said Chas. H. Lilly Co., and Wilmot H. Lilly, each object to any costs being taxed against them or either of them, except the statutory

Clerk's fees, Marshal's fees and attorney's fees, for which they would ordinarily be liable if judgment is adversed to them, upon the ground and for the reasons, that at all times these defendants have maintained a neutral position so far as the rights of the plaintiff and the Kaseno Products Company, as under the patents was concerned, simply maintaining that they were not contributing infringement. None of the costs sought to be taxed were incurred or made necessary by any act or claim of these defendants.

III.

The defendants object and except to the cost bill as proposed in this:

(a) Reporters fees (share per diem) $1003.13, upon the ground and for the reasons that the same is not taxable and is improper. That in no event would these objecting defendants be liable for any thereof.

(b) Miscellaneous fees, as stated in the cost bill, upon the same ground and for the same reasons.

(c) Witness fees, these defendants object to the taxation as against them or either of them of any of the witness fees, [201] upon the ground and for the reasons that none thereof were incurred or made necessary by these defendants; and, further, because said witness fees as taxed are exorbitant and excessive and were unnecessarily incurred.

(b) Because said cost bill is prematurely filed, there being no judgment yet entered.

JAY C. ALLEN,
Attorney for Chas. H. Lilly
Co. and Wilmot H. Lilly.

[Endorsed]: Filed July 11, 1932. Ed. M. Lakin, Clerk. [202]

[Title of Court and Cause.]

ORDER ALLOWING SUPPLEMENTAL PRAECIPE.

On motion of Jay C. Allen and Weldon G. Bettens, solicitors for The Chas. H. Lilly Co. and Wilmot H. Lilly, defendants-appellants in the above entitled cause, and good cause being shown therefor,

IT IS HEREBY ORDERED that said defendants-appellants be, and they are hereby, granted permission to file with the Clerk of this Court a Supplemental Praecipe, directing said Clerk to include in the record on appeal herein the following items:

1. Copy of Plaintiff's Exhibit No. 118.
2. Original of Plaintiff's Exhibit No. 85.
3. Original of Plaintiff's Exhibit No. 86.
4. Copy of this Order.

IT IS FURTHER ORDERED that the Clerk of this Court transmit to the Clerk of the Appellate

Court, as physical exhibits, Plaintiff's Exhibits Nos. 85 and 86.

Dated this 25th day of January, 1933.

EDWARD E. CUSHMAN,
Judge.

O. K. as to form:
G. Wright Arnold,
Raymond D. Ogden,
Attorneys for Plaintiff-Appellee.

[Endorsed]: Filed Jan. 26, 1933. Ed. M. Lakin, Clerk. [206]

[Title of Court and Cause.]

ORDER ALLOWING FILING OF AMENDED PRAECIPE AND FOR TRANSMISSION OF ORIGINAL EXHIBITS.

For good cause shown to this Court, it is

ORDERED that the complainant-appellee may file its "Amended Praecipe for Appellee for Additional Parts of the Record," bearing even date herewith.

FURTHER, IT IS ORDERED that the Clerk of the above entitled Court shall transmit original exhibits, both physical and documentary, to the Clerk of the Circuit Court of Appeals for the Ninth Circuit, for the use of that Court on the appeal herein.

Dated this 25th day of January, 1933.

EDWARD E. CUSHMAN,
Judge.

O. K. as to form:
Jay C. Allen,
Weldon G. Bettens,
Attorneys for Defendants-Appellants.

[Endorsed]: Filed Jan. 26, 1933. Ed. M. Lakin, Clerk. [207]

[Title of Court and Cause.]

PRAECIPE FOR TRANSCRIPT ON APPEAL.

To the Clerk of the Above Court:

You will please forthwith prepare a typewritten transcript on appeal herein, incorporating therein the copies of the following portions of the record:

1. Bill of complaint.
2. Subpoena issued thereon with return of service.
3. Motion of the defendants Lilly, for leave to file amended answer.
4. Order granting same.
5. Motion of the defendants Kaseno Products Co. and George F. Linquist, for leave to file amended answer.
6. Order granting same.
7. Amended answer of Chas. H. Lilly Co. and Wilmot H. Lilly.

8. Amended answer of Kaseno Products Co. and George F. Linquist.

9. U. S. patent No. 1,689,732—Laucks, being plaintiff's Exhibit No. 14.

10. U. S. patent 1,691,661—Laucks, being plaintiff's Exhibit No. 24. [208]

11. Two disclaimers, being plaintiff's Exhibit 15 and 77.

12. Stipulation of Kaseno and George F. Linquist which is plaintiff's Exhibit No. 10.

13. Stipulation of Chas. H. Lilly Co., being plaintiff's Exhibit No. 11.

14. Letter of October 17th, 1928, of Chas. H. Lilly Co., being plaintiff's Exhibit No. 59.

15. Letter of Chas. H. Lilly Co., of November 1st, 1928, being plaintiff's Exhibit No. 60.

16. Notice (a letter, Laucks to Chas. H. Lilly Co.), being plaintiff's Exhibit No. 34.

17. Court's memorandum opinion.

18. Notice presenting decree.

19. Decree.

20. Request for findings made by Chas. H. Lilly Co., and the Court's order written thereon refusing same and allowing exception.

21. Request for findings made by Wilmot H. Lilly with Court's order written thereon denying same and allowing exception.

22. Exceptions of defendants Lilly filed July 11, 1932, with Court's order written thereon allowing the same.

23. Exceptions of Kaseno Products Co., and George F. Linquist filed July 16, 1932, with Court's order written thereon allowing the same.

24. Assignment of errors of the defendants Lilly.

25. Assignment of errors of Kaseno Products Co., and George F. Linquist.

26. Petition for appeal made jointly by Chas. H. Lilly Co., Wilmot H. Lilly, Kaseno Products Co., and George F. Linquist and order allowing the same and fixing bond. [209]

27. Bond on appeal with Court's approval thereof.

28. Statement of the evidence.

29. Exceptions to cost bill made by defendants Lilly.

30. Exceptions to cost bill made by defendants Kaseno Products Co., and George F. Linquist.

31. Of this praecipe.

32. Original citation with proof of service.

JAY C. ALLEN,
WELDON G. BETTENS,
Solicitors for Defendants Chas. H. Lilly Co., and Wilmot H. Lilly.

J. Y. C. KELLOGG,
Solicitor for Defendants Kaseno Products Co., and George F. Linquist.

We acknowledge service of the foregoing Praecipe for Transcript on Appeal this 10th day of August, 1932.

RAYMOND G. OGDEN,
WARD W. RONEY,
Attorney for Complainant,
I. F. Laucks, Inc.

[Endorsed]: Filed Aug. 10, 1932. Ed. M. Lakin, Clerk. [210]

[Title of Court and Cause.]

SUPPLEMENTAL PRAECIPE.

To the Clerk of the Above Entitled Court:

You will please include in the record on appeal in the above entitled cause, in addition to the papers called for in our Praecipe filed August 10, 1932, the following:

1. Copy of Plaintiff's Exhibit No. 118.
2. Original of Plaintiff's Exhibit No. 85.
3. Original of Plaintiff's Exhibit No. 86.
4. Copy of Order dated the 25th day of January, 1933, allowing the filing of this Praecipe.
5. Copy of this Praecipe.

JAY C. ALLEN,
WELDON G. BETTENS,
Solicitors for Defendants-Appellants, The Chas. H. Lilly Co. and Wilmot H. Lilly.

Copy received this 25th day of January, 1933.
G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
Attorneys for Plaintiff-Appellee.

[Endorsed]: Filed Jan. 26, 1933. Ed. M. Lakin, Clerk. [211]

[Title of Court and Cause.]

AMENDED PRAECIPE FOR APPELLEE FOR ADDITIONAL PARTS OF THE RECORD.

To the Clerk of said Court:

Under Equity Rule 75 (a), the appellee, I. F. Laucks, Inc., hereby designates the following additional portions of the record as its praecipe for the transcript on appeal:

1. Abandonment of assignment of errors on appeal by Kaseno Products Co. and George F. Linquist.
2. Exhibit 2—Soya bean.
3. Exhibit 5—Soya bean oil.
4. Exhibit 6—Soya bean cake.
5. Exhibit 7—Soya bean flour.
6. Exhibit 9—Soya bean meal.
7. Exhibit 80—Committee report.
8. Exhibit 13—Stipulation re Chas. H. Lilly Co.—659.
9. Exhibit 16—Plywood—small piece.

10. Exhibit 17—piece of plywood.
11. Exhibit 18—Plywood expansion.
12. Exhibit 19—Three pieces of plywood with pin.
13. Exhibit 20—Plywood test piece—unbroken.
14. Exhibit 21—Plywood test piece—broken.
15. Exhibit 37—Tag used October 15, 1925.
16. Exhibit 38—Tag used since tag of Exhibit 37.
17. Exhibit 39—Tag used since tag of Exhibit 38.
18. Exhibit 40—Tag used during 1928.
19. Exhibit 43—Tag used from the end of 1926 to the present.
20. Exhibit 44—Tag attached to I-X glue.
22. Exhibit 48—Model of panel veneer. [212]
23. Exhibit 74—Statement showing sales of soya bean glue from 1923 to 1929.
24. Exhibit 127—1922 comparative glue chart.
25. Exhibit 128—1930 comparative glue chart.
26. Statement of the evidence.
27. Copy of Order of Court relative transmission of Original Exhibits.
28. Copy of this praecipe.

G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
Solicitors for Complainant-Appellee.

Dated January 25, 1933.

We acknowledge service of the foregoing amended Praecipe of Appellee for additional parts of the Record this 25th day of January, 1933.

JAY C. ALLEN,
WELDON G. BETTENS,
Solicitors for Defendants, Chas. H. Lilly Co. and Wilmot H. Lilly.

[Endorsed]: Filed Jan. 26, 1933. Ed. M. Lakin, Clerk. [213]

[Title of Court and Cause.]

CERTIFICATE OF CLERK U. S. DISTRICT COURT TO TRANSCRIPT OF RECORD ON APPEAL.

United States of America,
Western District of Washington—ss.

I, Ed. M. Lakin, Clerk of the United States District Court for the Western District of Washington, do hereby certify that this transcript of record, consisting of pages numbered from 1 to 213, inclusive, is a full, true and complete copy of so much of the record, papers and other proceedings in the above and foregoing entitled cause (except for omission of title of court and cause where omitted) as is required by praecipes of counsel filed and shown herein, as the same remain of record and on file in the office of the Clerk of said District Court at

Seattle, and that the same constitute the record on appeal herein from the Decree of said United States District Court for the Western District of Washington to the United States Circuit Court of Appeals for the Ninth Circuit.

I further certify that the following is a true and correct statement of all expenses, costs, fees and charges incurred in my office or on behalf of the appellant for making record, certificate or return to the United States Circuit Court of Appeals for the Ninth Circuit, in the above entitled cause, to-wit: [214]

Clerk's fees (Act of Feb. 11, 1925) for making record, certificate or return, 630 folios at 15¢ per folio	$94.50
Appeal fee (Sec. 5 of Act)	5.00
Certificate of Clerk to Transcript of Record	.50
Certificate of Clerk to Original Exhibits	.50
Total	$100.50

I further certify that the above cost of preparing and certifying record, amounting to $100.50, has been paid to me by the solicitors for the appellant.

I further certify that I transmit herewith the original citation issued in the above entitled cause.

IN WITNESS WHEREOF I have hereunto set my hand and affixed the official seal of the said

District Court at Seattle, in said District, this 10th day of February, 1933.

[Seal] ED. M. LAKIN,
Clerk, United States District Court for the Western District of Washington.
By TRUMAN EGGER,
Deputy Clerk. [215]

[Title of Court and Cause.]

CITATION.

United States of America, to I. F. Laucks, Inc., a Corporation, GREETING:

You are hereby notified that in a certain case in Equity in the United States District Court for the Western District of Washington, Northern Division, wherein I. F. Laucks, Inc., a corporation, is complainant, and Kaseno Products Co., a corporation, and George F. Linquist, Chas. H. Lilly Co., a corporation, and Wilmot H. Lilly, are defendants, an appeal has been allowed Wilmot H. Lilly [216] and the Chas. H. Lilly Co., Kaseno Products Co., a corporation, and George F. Linquist, defendants herein to the United States Circuit Court of Appeals for the Ninth Circuit.

You are hereby cited and admonished to be and appear in the United States Circuit Court of Ap-

peals for the Ninth Circuit at San Francisco, in the State of California, thirty (30) days after the date of this citation, to show cause, if any there be, why the order and decree appealed from should not be corrected and speedy justice done the parties in that behalf;

WITNESS the Honorable Edward E. Cushman, Judge of the District Court for the United States, for the Western District of Washingon, this 5th day of August, 1932.

Signed near Esterbrook, Wyoming.

EDWARD E. CUSHMAN,
District Judge.

Service of the foregoing citation and receipt of copy thereof is hereby acknowledged, this, the 10th day of August, 1932.

RAYMOND D. OGDEN,
WARD W. RONEY,
Attorneys for I. F. Laucks, Inc., Complainant.

[Endorsed]: Filed Aug. 10, 1932. Ed. M. Lakin, Clerk. [217]

In the United States Circuit Court of Appeals for the Ninth Circuit.

No. 7084.

THE CHAS. H. LILLY CO., et al.,
Defendants-Appellants,

vs.

I. F. LAUCKS, INC.,
Plaintiff-Appellee.

STIPULATION.

IT IS HEREBY STIPULATED by and between The Chas. H. Lilly Co. and Wilmot H. Lilly, defendants-appellants, and I. F. Laucks, Inc., plaintiff-appellee, through their respective attorneys of record herein, that the following items be omitted from the printed transcript of the record in this cause:

1. Notice of presenting decree (Item No. 18 in appellants' praecipe in this cause).

2. Exceptions of defendants, Kaseno Products Company and George F. Linquist (Item No. 23 in appellants' praecipe in this cause).

3. Assignments of error of defendants Kaseno Products Company and George F. Linquist (Item No. 25 in appellants' praecipe in this cause).

4. Exceptions to cost bill taken by defendants, Kaseno Products Company and George F. Linquist (Item No. 30 in appellants' praecipe in this cause).

Dated this 10th day of March, 1933.

JAY C. ALLEN,
WELDON G. BETTENS,
Attorneys for The Chas. H. Lilly Co. and Wilmot H. Lilly, Defendants-Appellants.

G. WRIGHT ARNOLD,
RAYMOND D. OGDEN,
Attorneys for I. F. Laucks, Inc., Plaintiff-Appellee.

[Endorsed]: Filed Mar. 13, 1933. Paul P. O'Brien, Clerk.

[Endorsed]: No. 7084. United States Circuit Court of Appeals for the Ninth Circuit. Chas. H. Lilly Co., a Corporation, Wilmot H. Lilly, Kaseno Products Co., a Corporation, and George F. Linquist, Appellants, vs. I. F. Laucks, Inc., a Corporation, Appellee. Transcript of Record. Upon Appeal from the District Court of the United States for the Western District of Washington, Northern Division.

Filed February 13, 1933.

PAUL P. O'BRIEN,
Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.